

AMERICAN
OIL & SUPPLY
❖ CO. ❖
NEWARK
NEW JERSEY

Lafayette
BRANDS
ARE A STANDARD
OF QUALITY

Fine Tools
Machinery
and Supplies

For Jewelers
Silversmiths and
Metal Workers

CARNEGIE LIBRARY
PITTSBURGH, PA.

AUG 27 1909

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PITTSBURGH, PA.

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By
AMERICAN OIL & SUPPLY CO.

INTRODUCTORY

We take pleasure in presenting herewith OUR FIRST GENERAL SUPPLY CATALOG.

It has been our aim to make this book a ready reference for the buyer.

Our present large business has been developed by a strict adherence to the following four cardinal considerations, which in substance stand for and always have represented our business policy. They are

The highest possible efficiency of service.

The sale of goods in all departments of superior quality.

Best possible prices and absolute fairness in all transactions.

The maintenance of a stock comprising the most complete assortment of fine Tools, Machinery and Supplies for the Jeweler, Silversmith, Engraver, Watch and Watch Case Maker, Tool Maker, Arts and Crafts and all kindred lines.

Your patronage respectfully solicited,

The American Oil & Supply Co.
NEWARK, N. J.

OUR BUILDING

is 75 feet front, 150 feet deep and 5 stories high.

Our stock and assortment is specially selected with this view in mind—

To Supply the Demand—
And Immediate Service.



Our facilities to serve our customers are unexcelled.

When Ordering Please Be Sure to give the **Page** number, also the number or size of the article.

REMEMBER

Mail Orders

It matters not whether your order is large or small, each one will receive *prompt* and *careful* attention.

Address all communications to the Company at our main office, 52-54-56 Lafayette Street, Newark, N. J.

Orders by Wire

Our facilities for *immediate execution* of telegraph or telephone orders are *unexcelled*. Our immense stock enables us to render our customers an exceptionally satisfactory emergency service.

Substitution

We shall not, if we can possibly avoid it, substitute any goods for those ordered, and when we are forced to do so, we give our customers the benefit of quality and price. In case such substitution is not satisfactory, goods may be returned at our expense. *But we especially request* in all such cases that due notice is given us before returning the goods; for it may be possible for us to make other disposition of said goods without incurring further expense.

Do Not Forget Insurance

Goods sent by common mail are at the risk of purchaser unless insured.

Customers desiring their mail packages insured may secure this protection by the payment of following nominal charges, specifying "Insure."

Packages not exceeding \$15.00 in value sent in *Unregistered Mail*, insured for 5 cents, extra.

Packages sent via *Registered Mail*, all values from \$1.00 to \$50.00, insured for 5 cents, extra.

Mail merchandise *will not* be registered or insured or both unless so ordered.

Terms and Suggestions

TO PURCHASERS

Our Guarantee

We have adopted "Lafayette" as a standard of quality, and all articles bearing that brand are guaranteed to be the Best of the kind obtainable.

We have also tried to secure only such other goods as would be first-class in every respect, and anything purchased of us not as represented or imperfect in any way may be returned at our expense, and if already paid for, money will be cheerfully refunded.

References

Dun and Bradstreet's or any bank or banker in the city of Newark, N. J.

We are Members of the **Jewelers** Board of Trade, also of The National Association of Credit Men.

Terms

All bills are payable in 30 days from date of invoice.

Cash Discount

Is 2 per cent if paid in 10 days from date of invoice.

C. O. D. Shipments

All orders for supplies for shipment C. O. D. should be accompanied by remittances of not less than 25 per cent of amount of purchase to protect transportation charges.

Credits

Parties with whom we have no account and who are unknown to us should enclose remittance to cover purchase in full, or favor us with references as to reliability.

Remittances

We have banking arrangements whereby checks from our customers can be deposited and collected without charge to them. It is, therefore, not necessary for them to secure New York Drafts. We also accept Express or Postoffice money orders.

Market Fluctuations

Articles subject to market fluctuations are sold at prices ruling on date of shipment.

Goods Returned

When goods are returned for credit or exchange, the name of the sender should be plainly marked on the package and a letter of advice mailed to us, that prompt and proper disposition of the same may be made on delivery here.

IMPORTANT FACTS

Packing

All goods are carefully packed by experienced men after double comparison with order, and our responsibility ceases on delivery of shipment in good condition to the transportation company, against whom all claims for breakage should be made. If, however, customers receiving damaged goods will promptly report to us, we will gladly adjust any loss, traceable to error or negligence on our part, or we will render every assistance possible in properly establishing their claims against the transportation company.

Shortages

All claims for shortages must be made within ten days from receipt of goods. As our stock comprises many small items, we request that customers make strict search before reporting omissions, as small articles are occasionally overlooked or thrown out with the packing.

Routing Shipments

In the absence of specific shipping directions, we will consign goods by such route and method as in our own judgment may appear most advantageous to the purchaser.

Boxing and Cartage

We make no charge for boxing or cartage, but do not allow cartage at destination.

Freight Prepaid

We do not prepay freight or express charges unless customer so instructs us, and then we charge same to customer's account.

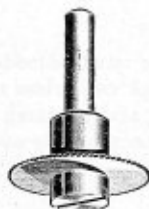
STEEL LATHE ARBORS.



Nut and Centers are Hardened.

Nos.....	10A	10B	10C	10D	10E	10G
Sizes	$\frac{1}{4}$ "	5-16"	$\frac{3}{8}$ "	$\frac{1}{2}$ "	$\frac{5}{8}$ "	$\frac{3}{4}$ "
Each	\$0.90	\$1.30	\$1.60	\$1.80	\$2.50	\$2.70

Will hold Grinding Wheels, also Circular Saws.



SAW ARBOR No. 76.

For holding saws only. Sizes smaller than 1 inch diameter. Illustration is full size.

Price, each (without saw)\$0.60

ALLOYS.

	Per Pound
Copper Alloy in Wire form	\$0.40
Copper Alloy in Grain form .....	.40
Genuine Guinea Alloy .....	.75
Wessel's Alloy .....	.75

Order Arbors this way, viz.: 1 only No. 10 C-8, or, 1 only 10 E-8.

GOLD ALLOYS.

These Alloys are giving general satisfaction to leading Jewelry manufacturers throughout the United States and Canada for the reason that they give the gold a fine color. They are very malleable, doing away with much annealing, and show up well on the test stone.

The following formulas are recommended as giving the best results.

For Yellow Gold use "R" Alloy.

Formulas:

8 Kt.	10 Kt.	12 Kt.
100 Dwt. Gold	100 Dwt. Gold	100 Dwt. Gold
125 Dwt. Gold	100 Dwt. "R" Alloy	64 Dwt. "R" Alloy
40 Dwt. Silver	20 Dwt. Silver	24 Dwt. Silver
35 Dwt. Copper	20 Dwt. Copper	12 Dwt. Copper.
<hr/> 300	<hr/> 240	<hr/> 200
13½ Kt.	14 Kt.	18 Kt.
100 Dwt. Gold	100 Dwt. Gold	100 Dwt. Gold
60 Dwt. "R" Alloy	56½ Dwt. "R" Alloy	25 1-3 Dwt. "R" Alloy.
18 Dwt. Silver	15 Dwt. Silver	8 Dwt. Silver
<hr/> 178	<hr/> 171½	<hr/> 133 1-3

For Red Gold use "R" No. 10 Alloy.

Formulas:

8 Kt.	10 Kt.	12 Kt.
100 Dwt. Gold	100 Dwt. Gold	100 Dwt. Gold
140 Dwt. No. 10 Alloy	100 Dwt. No. 10 Alloy	75 Dwt. No. 10 Alloy
60 Dwt. Silver	40 Dwt. Silver	25 Dwt. Silver
<hr/> 300	<hr/> 240	<hr/> 200
14 Kt.	18 Kt.	
100 Dwt. Gold	100 Dwt. Gold	
51½ Dwt. No. 10 Alloy	23 1-3 Dwt. No. 10 Alloy	
20 Dwt. Silver	10 Dwt. Silver	
<hr/> 171½	<hr/> 133 1-3	

"R", also "R" No. 10 Alloys. Per pound.....\$0.60

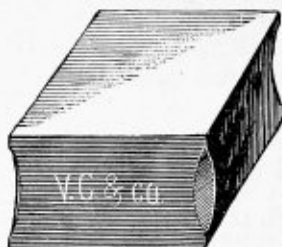
Have your order read, viz.: 3 lbs. "R" Alloy .9, or 1 lb. R10 Alloy .9.

IMPORTED ANVILS.

With Mirror Faces.



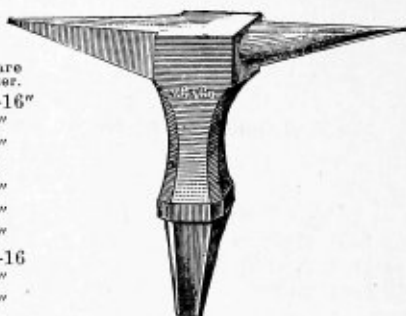
Nos.	Face.	Each.
1	1 1/8" sq.	\$0.48
2	1 1/4" sq.	.48
3	1 1/2" sq.	.48
4	1 5/8" sq.	.60
5	1 3/4" sq.	.72
6	2" sq.	.96
7	2 1/4" sq.	1.44
8	2 1/2" sq.	1.68
9	2 5/8" sq.	1.92



No.	Inches Square.	Each.	No.	Inches Square.	Each.
A	1	\$0.65	G	2 1/4	\$1.47
B	1 1/4	.82	H	2 1/2	1.63
C	1 1/2	.98	K	3	1.95
D	1 3/4	1.14	L	3 1/2	2.28
E	2	1.30	M	4	2.60

BICK (ANVIL) IRON.

Nos.	Each.	Length.	Square Center.
10	\$0.70	3 1/2"	11-16"
20	.70	4"	3 1/4"
30	.70	4 3/4"	7/8"
40	.70	5 5/8"	1"
50	.70	6"	1 1/8"
60	.88	6 1/8"	1 1/4"
70	1.05	7"	1 3/8"
80	1.40	7"	1 7-16"
90	1.75	8 1/2"	1 5/8"
100	2.10	8 7/8"	1 5/8"



BICK (ANVIL) IRON.

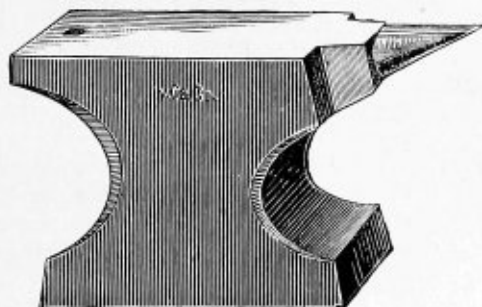
Mounted in Iron Base.

Extreme length, 3 1/2". Square center, 11-16".



No.	Base.	Each
P	Japanned	\$1.00
Q	Nickel Plated	1.25

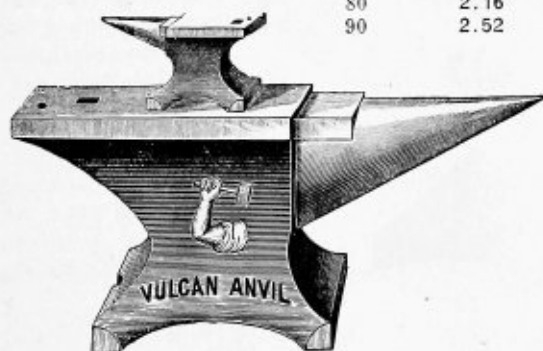
Order as follows and avoid error: 2 Anvils No. 6-10, or 1 only No. P-10.



ANVILS.

This illustration represents an **Imported Anvil** made of High Grade Steel. Faces are Polished to a **Mirror Finish**.

Numbers	Each	Length About	Width About.	Horn About
15	\$ 0.72	3 1/4"	2"	7/8"
20	.72	3 1/2"	2 3-16"	1"
30	.72	3 5/8"	2 3/8"	1"
40	.90	3 3/4"	2 1/2"	1 1-16"
50	1.08	4 1-16"	2 3/4"	1 1/8"
60	1.44	4 3/4"	2 7/8"	1 3/8"
70	1.80	5"	3"	1 1/2"
80	2.16	5 1/8"	3 1/4"	1 1/2"
90	2.52	5 1/4"	3 1/2"	1 9-16"



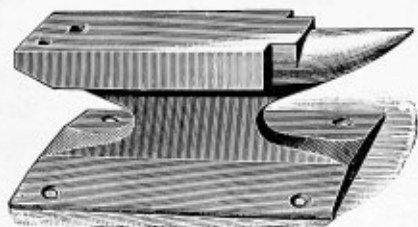
The face of the **Vulcan Anvil** is one solid piece of tool steel, thoroughly welded to the body of the anvil by a patented process. It is then accurately ground and tempered.

The horn is covered with and its extremity is made entirely of tough, untempered steel.

Anvil Number	Price Each	Weight About	Width of Face	Length of Face	Length of Horn
00	\$ 2.00	5 lbs.	1 1/2"	4 3-16"	2 13-16"
0	2.75	10 lbs.	2 5-16"	5 1-16"	3 7/8"
1	3.25	15 lbs.	2 5-16"	5 1/4"	3 3/4"
2	4.00	20 lbs.	2 3/4"	6"	4 5/8"
3	4.50	30 lbs.	2 3/4"	7 1/4"	4 3/4"
4	5.25	40 lbs.	3"	7 1/2"	6"
5	6.00	50 lbs.	3"	8 1/2"	6"
6	6.50	60 lbs.	3 1/4"	10 5/8"	7 1/4"
7	7.25	70 lbs.	3 1/4"	11"	7 3/4"
8	8.00	80 lbs.	3 1/4"	11 3-16"	7 5/8"
9	9.00	90 lbs.	3 1/2"	12"	7 5/8"
10	10.00	100 lbs.	3 1/2"	12 1/2"	7 5/8"
11	11.00	110 lbs.	3 1/2"	13"	7 3/4"
12	12.00	120 lbs.	3 3/4"	13"	7 3/4"

Order the simple way, viz:—1 only No. 40-11, or 1 only No. 6-11.

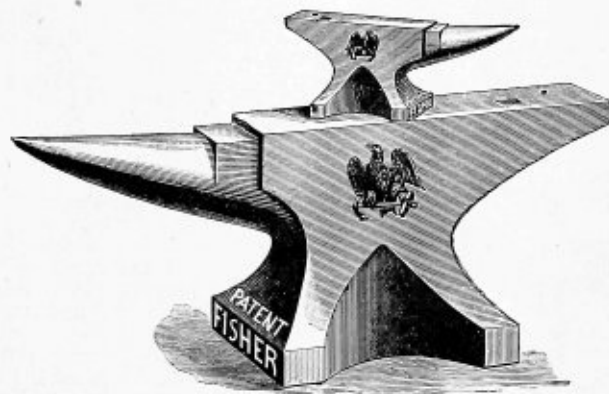
ANVILS.



This Anvil is forged from solid steel—carefully and suitably tempered throughout.

The Horn is two inches long, in addition to the length of face given above. The face, sides and horns are nicely polished. The bottom part is jappaned.

No. 1	5 in. long; $1\frac{1}{2}$ in. wide; weight 3 lbs.	Price, \$2 00 each.
No. 2	6 in. long; 2 in. wide; weight $6\frac{1}{2}$ lbs.	Price, 2 50 each.
No. 3	7 in. long; 2 in. wide; weight $10\frac{1}{2}$ lbs.	Price, 3 00 each.



The Eagle Anvil body is made of gun metal—crystallized iron—which is warranted neither to settle nor break.

Note—The "A" size weighs 8 lbs.

All other sizes of Eagle Anvils, the numbers represent the weights respectively.

Number of Anvil, "A"	Price Each.	Length of Face.	Width of Face.
	\$ 3 50	$5\frac{3}{4}$ "	$1\frac{3}{4}$ "
20	4 00	$6\frac{1}{4}$ "	$2\frac{1}{4}$ "
30	4 30	$7\frac{1}{4}$ "	$2\frac{1}{4}$ "
40	4 50	$8\frac{3}{4}$ "	3"
50	5 00	$9\frac{1}{4}$ "	3"
60	5 50	10"	3"
70	7 00	$10\frac{1}{2}$ "	$3\frac{1}{4}$ "
80	8 00	$10\frac{1}{2}$ "	$3\frac{1}{4}$ "
90	9 00	11"	$3\frac{1}{4}$ "
100	10 00	12"	$3\frac{1}{2}$ "
110	11 00	$12\frac{3}{4}$ "	$3\frac{1}{2}$ "
120	12 00	$12\frac{3}{4}$ "	$3\frac{1}{2}$ "

Write your orders—viz.; 1 only No. 2-12; or 1 only No. 20-12.

"HAY-BUDDEN" SOLID WROUGHT ANVILS.

These Anvils, weighing less than 100 pounds, have the faces ground flat and all edges square. Anvils over 100 pounds have faces ground slightly oval, and the front forward edge slightly rounded.

ANVIL BLOCKS.
 For Mounting Anvils.
Approximate Dimensions.

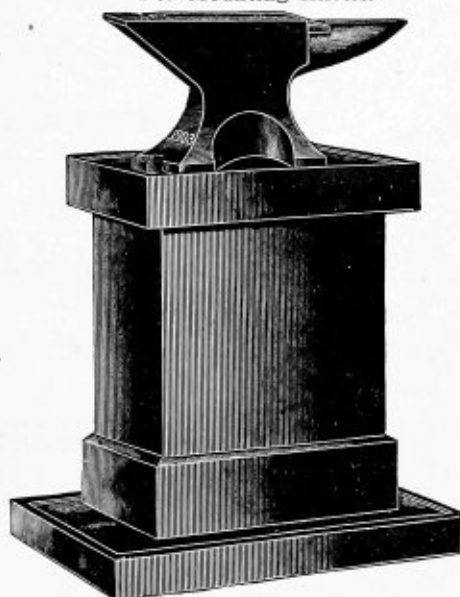
Weight Lbs.	Face Inches.	Horn Inches.	Hardie Hole.	Pritchel Hole.
10	2 x 6	3½	½	⅞
20	2¼ x 7	4	⅝	⅞
30	2½ x 8	5	⅝	⅞
40	2¾ x 9	6	¾	⅞
50	3 x 9½	6½	¾	⅞
60	3¼ x 10	7	¾	⅞
70	3⅝ x 11	7½	¾	⅞
80	3½ x 12	8½	¾	⅞
100	3⅝ x 13½	9	¾	⅞
125	3¾ x 15	10	⅞	⅞

Details and prices for sizes larger than 125 lbs. upon application.

PRICES.**For Hay-Budden Anvils.**

Number or Weight.	Each.
10 lbs.	\$ 3.75
20 lbs.	4.65
30 lbs.	5.65
40 lbs.	6.25
50 lbs.	7.35
60 lbs.	8.00
70 lbs.	8.85
80 lbs.	9.50
100 lbs.	12.00
125 lbs.	15.00

Note—Hay-Budden Anvils are positively unexcelled. They are the only American made anvil that can be compared to the famous

Peter Wright Anvil.

These Blocks are specially made for the purpose and are thoroughly substantial.

Number.	For Anvil Weighing	Each.
A	20 lbs.	\$4.50
B	30 lbs.	4.50
C	40 lbs.	4.50
D	50 lbs.	4.50
E	60 lbs.	5.00
G	70 lbs.	5.00
H	80 lbs.	5.50
J	90 lbs.	5.50
K	100 lbs.	6.00

Blocks 24" High for all Size Anvils.

Prices Do Not Include Anvil.

IMPROVED MARKING AWLS.

Also Called Scribes.



No. 5 NICKEL PLATED. Dozen \$4.50

Chuck firmly holds an ordinary Sewing Needle.

No. 1. ONE END BENT. $6\frac{3}{4}$ " length. Dozen \$2.30No. 2. BOTH ENDS STRAIGHT. $6\frac{3}{4}$ " length. Dozen \$2.30

No. 3. KNIFE ON ONE END. Dozen \$4.50



No. 4. 4-INCH BLADE. POLISHED MAPLE FINISH HANDLE. Dozen \$1.62



THE L.S. STARRETT CO. NO. 68 ATHOL, MASS. U.S.A.

"A"	8" without knife point	\$0.50 each
"B"	12" without knife point	.50 each
"C"	Extra for knife point	.15 each
"D"	Extra for scriber point	.20 each



No. 70. 25c each.

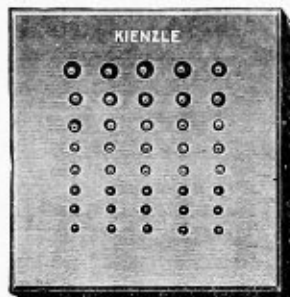
The scriber is a reversible pocket scriber, telescoping into the stock and is held by a slight turn of the chuck so that it is always as safe to carry in the pocket as a penknife.

Note—Always follow item number with page number.

BEADING TOOLS AND PLATES.



OBLONG PLATE \$2.00 each.



SQUARE PLATE \$2.00 each.



MALE TOOLS—Bouterolles.

FEMALE TOOLS—Perloirs poli.

	Dozen.	Each.
Nos. 1 to 12	\$3.00	\$0.30
Nos. 13 to 24	3.50	.35
Nos. 25 to 30	4.50	.40

Both Styles—Same Prices.

EGRENOIRS—MALE TOOLS.

	Dozen.	Each.
Nos. 1 to 3	\$4.50	\$0.40
Nos. 4 to 6	5.50	.50
Nos. 7 to 9	6.50	.60
Nos. 10 to 12	8.50	.75

FRISOIRS—FEMALE TOOLS.

Grains.	Numbers.	Dozen.	Each.
2, 3, 6	1 to 6	\$4.50	\$0.40
2 & 3	7 to 10	5.50	.50
6	7 to 9	5.50	.50
6	10 to 12	6.50	.60
12	1 to 4	5.50	.50
12	5 to 8	6.50	.60
12	9 to 10	7.50	.70
12	11 to 12	8.50	.75
15	1 to 4	5.50	.50
15	5 to 8	6.50	.60
20	1 to 6	6.50	.60
24	1 to 6	6.50	.60
30	1 to 6	8.50	.75

Perloirs polis pour Vaiselle.

SHORT TOOLS FOR SILVERWARE.

	Dozen.	Each.
Nos. 1 to 12	\$3.50	\$0.35
Nos. 13 to 24	4.50	.40
Nos. 25 to 30	5.50	.50

LINE BEADING TRACERS.

Interlignes.

Numbers.	Rows.	Dozen.	Each.
1 & 2	2, 3, 5	\$3.50	\$0.35
3 to 6	2 & 3	4.50	.40
3 & 4	5	4.50	.40
5 & 6	5	5.50	.50

POINTILLOIRS.

Grains	Numbers.	Dozen.	Each.
3 & 4	1 to 6	\$3.50	\$0.35
3 & 4	7 to 12	4.50	.40
3 & 4	13 to 15	5.50	.50
6	1 to 4	4.50	.40
6	5 to 6	5.50	.50
6	7 to 10	6.50	.60
7	1 to 6	4.50	.40
7	7 to 12	5.50	.50
7	13 to 16	6.50	.60
9	1 to 6	4.50	.40
9	7 to 12	5.50	.50
10	1 to 6	4.50	.40
10	7 to 9	5.50	.50
10	10	6.50	.60
19	1 to 4	4.50	.40
19	5 to 8	5.50	.50
19	9	6.50	.60

Do not fail to specify exactly the tool or tools you want.

LEATHER BELTING AND LACING.



SOLID ROUND LEATHER BELTING IN THE COIL.

Prices per Running Foot.

No. A	Diameter $\frac{1}{8}$ "	Per foot	\$0.07
No. B	Diameter $\frac{3}{16}$ "	Per foot	.08
No. C	Diameter $\frac{1}{4}$ "	Per foot	.09
No. D	Diameter $\frac{5}{16}$ "	Per foot	.12
No. E	Diameter $\frac{3}{4}$ "	Per foot	.14
No. G	Diameter $\frac{1}{2}$ "	Per foot	.18
No. H	Diameter $\frac{3}{8}$ "	Per foot	.24

SOLID ROUND LEATHER BELTING ON WOOD SPOOLS.

Containing 100 feet of a size.

Nos.	J	K	L	M	N	O	P
Diam.	$\frac{1}{8}$ "	$\frac{3}{16}$ "	$\frac{1}{4}$ "	$\frac{5}{16}$ "	$\frac{3}{4}$ "	$\frac{1}{2}$ "	$\frac{3}{8}$ "
Per foot	\$0 07	.08	.09	.12	.14	.18	.24



TWISTED LEATHER BELTING.

Diameters	$\frac{1}{8}$ "	$\frac{3}{16}$ "	$\frac{1}{4}$ "	$\frac{5}{16}$ "	$\frac{3}{8}$ "	$\frac{1}{2}$ "	$\frac{5}{8}$ "	$\frac{3}{4}$ "	
Per foot	\$0 12	10	08	10	12	15	17	22	27



STEEL BELT COUPLINGS.

For Round Belts of Every Description.

Sizes	$\frac{1}{8}$ "	$\frac{3}{16}$ "	$\frac{1}{4}$ "	$\frac{5}{16}$ "	$\frac{3}{8}$ "	$\frac{1}{2}$ "	$\frac{5}{8}$ "	$\frac{3}{4}$ "
Per doz. pairs	\$4 00	3 50	3 00	3 00	2 50	2 50	2 00	2 50

FLAT LEATHER BELTING.

Width Inches	Price per foot	Width Inches	Price per foot	Width Inches	Price per foot
$\frac{1}{2}$	\$0.12	2	\$0.48	4	\$0.96
$\frac{5}{8}$	.15	$2\frac{1}{4}$	.54	$4\frac{1}{2}$	1.08
$\frac{3}{4}$	.18	$2\frac{1}{2}$	.60	5	1.20
$\frac{7}{8}$	.21	$2\frac{3}{4}$	.66	$5\frac{1}{2}$	1.32
1	.24	3	.72	6	1.44
$1\frac{1}{4}$	.30	$3\frac{1}{4}$	.78	$6\frac{1}{2}$	1.56
$1\frac{1}{2}$	.36	$3\frac{1}{2}$	.84	7	1.68
$1\frac{3}{4}$	.42	$3\frac{3}{4}$	.90	8	1.92

Double Belting List twice that of Single Belting List.

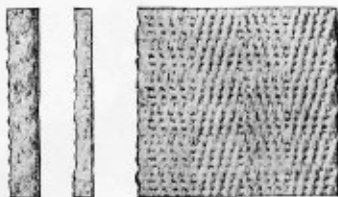
Note—Always affix page number to each item ordered. It will save you much time in checking your bills. Also avoid error.

ENDLESS BELTS.



H-99 (STANDARD).

For Heavy Sand and Emery Polishing.



Made particularly for curved inside and outside polishing. Is strong and pliable and holds the emery well.

These belts are sewed carefully with the best linen thread. We furnish them complete ready for use.

Width Inch	Price per foot	Additional Charge per Belt if Wanted Endless
$\frac{1}{2}$	\$0 02	\$0 10
$\frac{3}{4}$	03	13
$\frac{7}{8}$	03 $\frac{1}{2}$	14
1	04	14
1 $\frac{1}{8}$	04 $\frac{1}{2}$	15
1 $\frac{1}{4}$	05	15
1 $\frac{1}{2}$	06	16
1 $\frac{3}{4}$	07	17
2	08	18
2 $\frac{1}{2}$	10	22
3	12	25
4	16	30
5	20	40
6	25	50

Corded web
(H. 16)

	Per 100
$\frac{1}{2}$ in. x 8 ft.	\$3 80
$\frac{5}{8}$ in. x 8 ft.	4 25
$\frac{3}{4}$ in. x 8 ft.	4 75
$\frac{7}{8}$ in. x 8 ft.	5 20
1 in. x 8 ft.	6 00
1 $\frac{1}{4}$ in. x 8 ft.	7 15
1 $\frac{1}{2}$ in. x 8 ft.	8 25

Also put up in 72-yd. rolls.

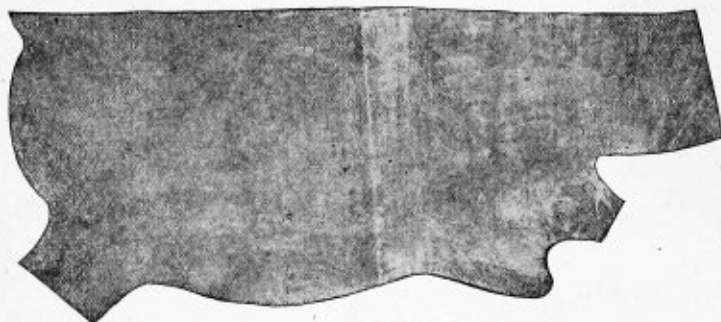
Inches	Per Roll	Inches	Per Roll
$\frac{1}{2}$	\$1 45	1	\$2 50
$\frac{5}{8}$	1 65	1 $\frac{1}{4}$	3 15
$\frac{3}{4}$	1 93	1 $\frac{1}{2}$	3 60



Showing method of joining a double belt with Hooks.

Write your orders thus: 10 ft. 1 $\frac{1}{4}$ " H-99-17—it is not necessary to say anything else.

RAWHIDE LACE LEATHER



Best quality,
closely trimmed.

Prices the
lowest for the
best goods.

Fresh stock al-
ways on hand.

\$0 30 Sq. Ft.

LACE LEATHER CUTTERS.

Will cut all widths, $\frac{3}{16}$ " to $\frac{3}{4}$ ", in-
clusive.

Price\$0 50



CUT LACING

Hand Cut.

Finest Quality.

Put up in different widths in bundles containing 100 feet each, full measure.



Widths	$\frac{1}{4}$ "	$\frac{5}{16}$ "	$\frac{3}{8}$ "	$\frac{7}{16}$ "	$\frac{1}{2}$ "	$\frac{5}{8}$ "	$\frac{3}{4}$ "
Per Bundle of 100 feet..	\$1 25	\$1 50	\$1 75	\$2 00	\$2 25	\$3 00	\$3 75

BELT (LIQUID) DRESSING.

"The Best," made by American Oil & Supply Co.

It will Preserve your Belts.

1 Gallon	$\frac{1}{2}$ Gallon	1 Quart	1 Pint
\$1 00	\$0 75	\$0 50	\$0 35

BELT GREASE.

A. O. & S. Co.'s Make.

It will prevent your Belts from slipping.

1 lb. Bar\$0 30

BLAKE'S IMPROVED BELT STUDS.

100 Hooks of a Size Packed in a Box.

No.'s Per Box.

Exact Sizes.

66 \$0 60

55 70

44 80

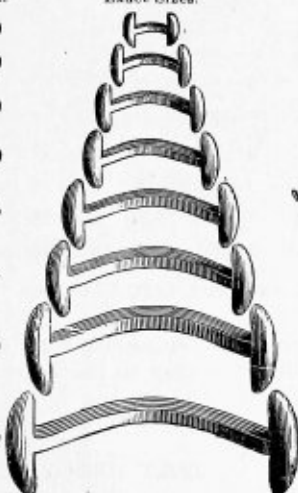
33 90

22 1 25

111 1 65

110 2 00

100 2 50



AWL AND PLIER COMBINED.

For Blake's Belt Studs.



40c each.

LEATHER CUTTER.

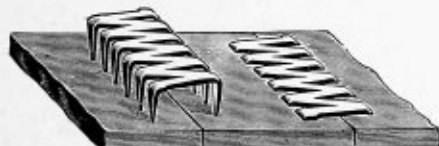
For Blake's Belt Studs.

90c each.



Showing Cutter in Use.

BRISTOL'S PATENT STEEL BELT IMPROVED POINTED BELT HOOKS LACING.



READY TO APPLY FINISHED JOINT

No.	Thickness of Belt.	Price Per Box.
"A" 00	For Belts $\frac{1}{16}$ " to $\frac{1}{8}$ "	\$1 00
"B" 0	For Belts $\frac{1}{8}$ " to $\frac{3}{16}$ "	1 00
"C" 1	For Ordinary Single Leather Belts $\frac{3}{16}$ " to $\frac{1}{4}$ "	1 50
"D" 2	For Extra Heavy and Wide Single Leather Belts $\frac{1}{4}$ " to $\frac{5}{16}$ " thick.	2.00
"E" 3	For Double Leather Belts $\frac{1}{8}$ " to $\frac{3}{8}$ "	2 50
"G" 4	For Heavy Double Leather Belts $\frac{3}{8}$ " to $\frac{7}{8}$ "	3 00



No. 15	(250 in a box)	per M	\$2 00
No. 14	(250 in a box)	per M	2 40
No. 13	(250 in a box)	per M	2 60
No. 12	(250 in a box)	per M	2 80
No. 11	(250 in a box)	per M	3 00
No. 10	(250 in a box)	per M	3 50
No. 9	(250 in a box)	per M	4 00
No. 8	(250 in a box)	per M	5 00
No. 7	(250 in a box)	per M	6 00
No. 6	(125 in a box)	per M	8 50
No. 5	(125 in a box)	per M	11 00
No. 4	(125 in a box)	per M	14 00
No. 3	(125 in a box)	per M	16 00
No. 2	(125 in a box)	per M	20 00
No. 1	(125 in a box)	per M	30 00

Order goods by the Simple Method, viz.:—1 Box No. 44-19, or 1 Box "D"-19.

WIRE BELT LACING AND TOOLS.



In 50-foot Coils. Each Coil in a Box.

Prices:

- No. 00—For Belts $\frac{1}{2}$ to 1 inches wide.
 No. 0—For Belts 1 to 2 inches wide.
 No. 1—For Belts 2 to 6 inches wide.
 No. 2—For Belts 6 to 20 inches wide.
 No. 3—For Belts 20 to 40 inches wide.

All Sizes, List, \$2.00 per 100 Feet.

This lacing is made of a metal especially compounded to secure the greatest tensile strength and proper flexibility peculiar to the special requirements of metallic belt lacing.

BELT MARKER.



Reduced cut. Actual size, 5 in. long.

Price, each25c

BELT GROOVER.



Reduced cut. Actual size, 6 in. long.

Price, each50c

BELT PUNCH.

Bright Steel, 3-32 inch Tube.



Reduced cut. Actual size, $8\frac{1}{2}$ in. long.

Price, each50c

CUTTING PLIERS.

Nickel Plated.



Reduced cut. Actual size, 5 in. long.

Price, each50c

The Set of Tools in a Box, \$1.50.

Note—By writing your orders as designated at bottom of pages you can save fully one-half of your time in checking your invoices. The number following the item or item number tells you at once the page number that the item is on.

JEWELER'S WORK BENCH.



This bench is substantially made of solid oak with a $1\frac{1}{4}$ -inch birch top cut out in a semi-circle. The removable filing block in it will fit any of the three holes as shown in cut.

It has seven drawers for supplies, tools, etc., and an apron drawer, zinc lined and tapered toward the center, with a removable cup for filings.

It provides a place for polishing lathe at left end of bench.

If desired, bench can be fitted out with gas and air piping and cocks at right end of bench, connected to bellows in cupboard of bench at a small additional cost.

It is 47 inches long, 24 inches deep and 38 inches to top of working table.

Finished in weathered, golden or antique color.

"A"	Price, with Gas Piping as shown	\$17 50
"B"	Price, without Gas Piping as shown	16 00



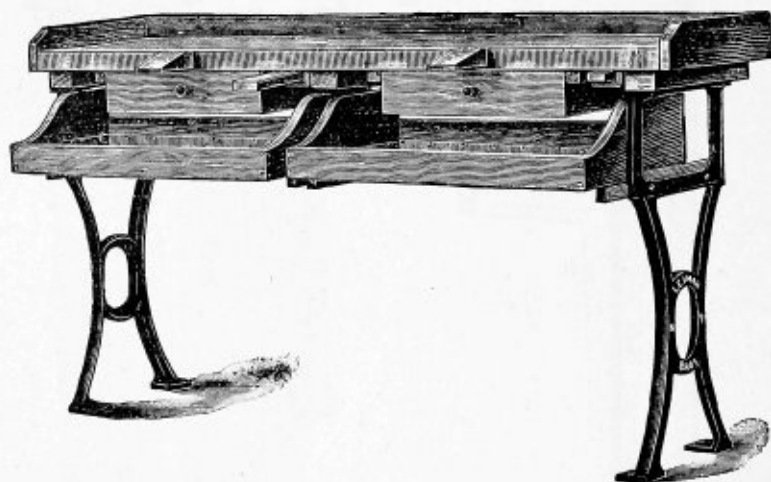
BENCH PIN.

	Dimensions	Per doz.	Each
Small	$5\frac{1}{4} \times 2\frac{1}{4}$ "	\$0 75	\$0 08
Medium	$6\frac{1}{4} \times 2\frac{3}{8}$ "	75	08
Large	7 x 3"	1 00	19

How to order, viz.: 1 only A-21, or $\frac{1}{2}$ Doz. Medium -21. The best, quickest and safest way to write orders.

JEWELER'S WORK BENCHES.

Suitable for Office, Store or Factory.



Tops are of hard maple wood, either straight front or cut out and nicely finished.

The iron legs are made in two sections for convenience in shipping.

Bottom pan consists of wood frame and galvanized sheet iron bottom furnished with or without cups.

	1 Seat	2 Seat	3 Seat
Length	34 inches	60 inches	87 inches
Size of Top Drawer, 12x18".		Size of Bottom Pan, 17x27".	

An arm rest is furnished for Setter's use.

"A" Single Bench with Iron Legs, each.....	\$8 75
"C" Single Bench with Turned Wood Legs, each	8 25
Two or more Benches with Iron Legs, each	8 00

Cups or Pans, 50c each.

Cut-out Fronts, 50c each.

We make Benches for Engravers, Setters and Silversmiths to order, and special prices given for quantities and estimates cheerfully given.

When writing orders affix page number. It saves time.

JEWELERS' AND STONESETTERS' BENCHES.



Stonesetters' Bench. No. 1.....\$20 00



Jewelers' Bench. No. 2...\$8 00

The No. 1 Bench is arranged for three (3) workmen.
 Center Front Drawer, 11x17x3 $\frac{1}{4}$ ".
 The Side Drawers are 9x9 $\frac{3}{4}$ x3 $\frac{1}{4}$ ".
 Height floor to Table Top, 35".
 Dimensions of Top: At the Wall, 59"; at the Front, 42".
 From Wall to Front at the Center, 34".
 The No. 2 Bench is for a single workman.
 Extreme dimensions, 17x32x35".
 Table Top is 15x30x2".
 Drawer measures 12x18x3".
 Pan measures 17x27x2 $\frac{1}{2}$ ".
 Floor to Table Top, 33".

BENCHES.



No. 40 \$8 50.

This Bench is 50 inches long, 32 inches high, 20 inches wide, with a 7 inch well for tools, and a 13 inch glued up maple top $1\frac{3}{4}$ inches thick.

The drawer under the top is 18 inches long, 18 inches wide and 4 inches deep inside, and has a lock.

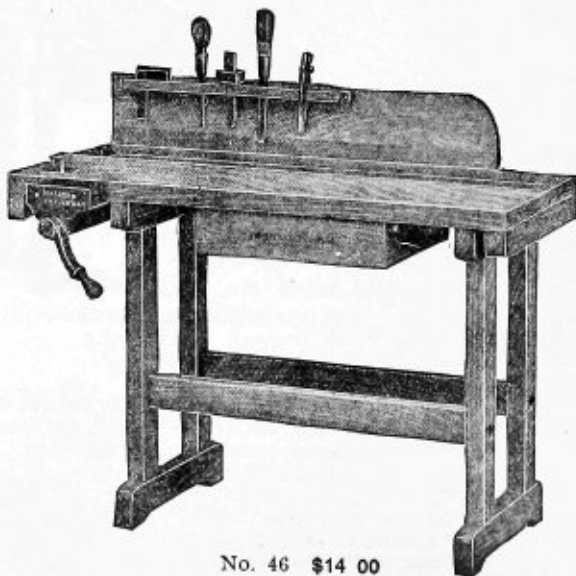
The back board, tool rack and one steel bench stop are furnished just as shown in the cut. We do not furnish tools except on special orders.

This Bench is 50 inches long, exclusive of tail vise, or 56 inches long over all. It is 32 inches high and 20 inches wide with a 13 inch glued up maple top $1\frac{3}{4}$ inches thick, and has a 7 inch well for tools.

Holes for stops are mortised near the front of the bench top, and three spring wood stops are furnished with each bench.

Each Bench is fitted with two wood vises.

A back board and tool rack as shown in the cut goes with each Bench.



No. 46 \$14 00

BENCHES

No. 42 \$14 50.



Same as Bench No. 40 on the opposite page with the added advantage of the cabinet as a storage place for unfinished work or tools.

The cabinet has three drawers, each 18 inches long, 18 inches wide and $3\frac{1}{4}$ inches deep, fitted with locks. The cupboard is $18\frac{1}{2}$ inches long, $14\frac{1}{4}$ inches high, and 10 inches wide, with lock on door.

A back board, tool rack and three spring wood stops are furnished with each Bench.

No. 55 \$15 40

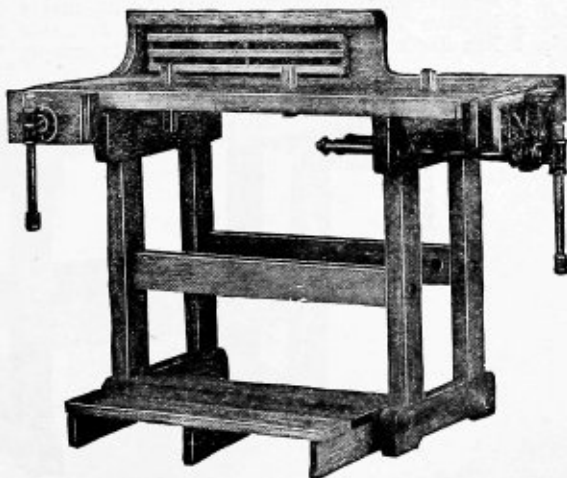
Wood Front Vise, Iron
End Vise.

No. 55A \$14 40

Wood Front and End
Vises.

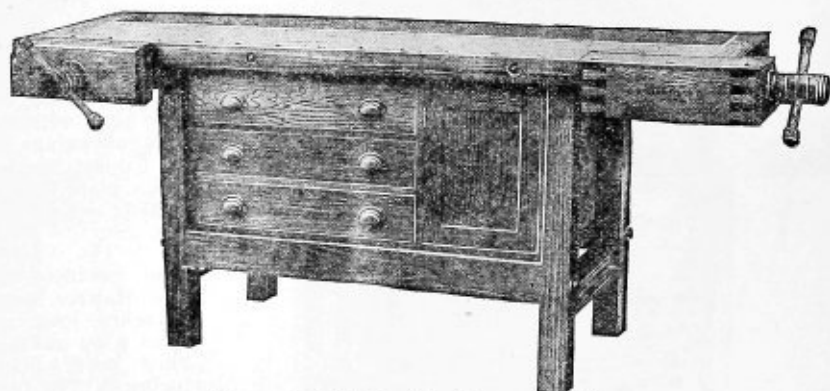
The iron vises have wood facings and an iron stop in front jaws. Designed especially for Manual Training School use. Three wood spring stops are furnished.

The top is 50 inches long exclusive of tail vise, is 20 inches wide with a 14 inch glued up maple portion $1\frac{3}{4}$ inches thick, back of which is a 6 inch well for tools, fitted with plane rests.



The platform shown can be furnished when desired at an additional list price of 60 cents each. This is made 2 to 6 inches high as ordered.

BENCHES



Prices Do Not Include Stops or Slides.

No. 101 Regular size, 25 in. by 6½ ft., 14 in. maple top; weight, 280 lbs. \$21 40

No. 102 Regular size, 30 in. by 6½ ft., 16 in. maple top; weight, 300 lbs. 22 40

No. 103 Regular size, 30 in. by 7 ft., 16 in. maple top; weight, 310 lbs. 23 40

Benches, 34 inches high.

The Cabinet has three drawers each 18 inches long, 24 inches wide and 4¼ inches deep. The cupboard is 19¼ inches long, 12 inches wide and 16 inches high. All cabinets are fitted with locks, both on drawers and cupboard door.

Benches Same Style as Above—But Without Cabinet.

Prices Do Not Include Stops or Slides.

No. 1 Regular size, 25 in. by 6½ ft., 14 in. maple top; weight 180 lbs. \$12 00

No. 2 Regular size, 30 in. by 6½ ft., 16 in. maple top; weight 200 lbs. 13 00

No. 3 Regular size, 30 in. by 7 ft., 16 in. maple top; weight 210 lbs. 14 00



No. 11

Price Does Not Include Stops or Slides, \$10 40.

This Bench is 5 feet long, 34 inches high and 22 inches wide, with a 13 inch glued up maple top, 2¾ inches thick, and a 9 inch well for tools.



No. 97 \$7 40

A back board and tool rack and three spring wood stops are always furnished. The back board may be let down flush with the top or raised as shown in the cut.

BENCHES

No. 97 is a Bench especially desirable for use where space is limited.

Exclusive of tail vise this Bench is 34 inches long, 40 inches long over all, is 32 inches high, with a top 18 inches wide, having a 12 inch glued up maple portion $1\frac{3}{4}$ inches thick, and a 6 inch well at the back for tools.

The leg and girt stock is of $3 \times 1\frac{3}{4}$ inch maple, the leg construction being in the keyed type instead of draw bolt.



No. 44 \$27 00

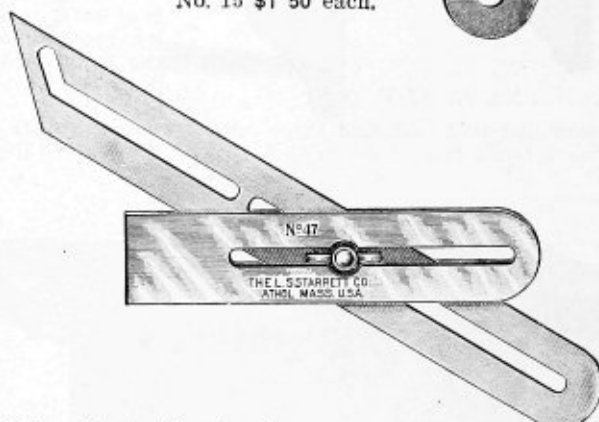
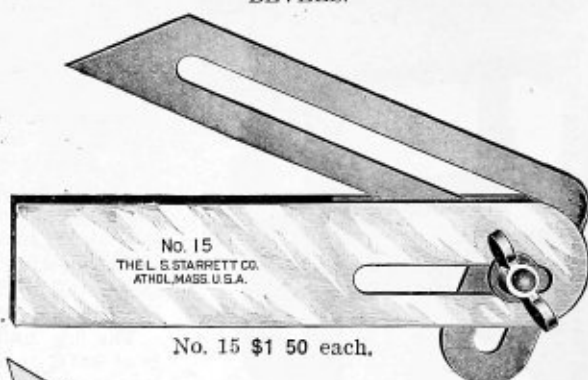
No. 44 Bench was especially designed for the Manual Training Department of the Grand Rapids, Michigan, Public Schools, and is undoubtedly one of the best designed and most suitable double benches for school work.

The Bench is 32 inches high, 54 inches long, $29\frac{1}{2}$ inches wide, with a 9 inch glued up maple top, $2\frac{5}{8}$ inches thick, on each side of a $10\frac{1}{2}$ inch well for tools.

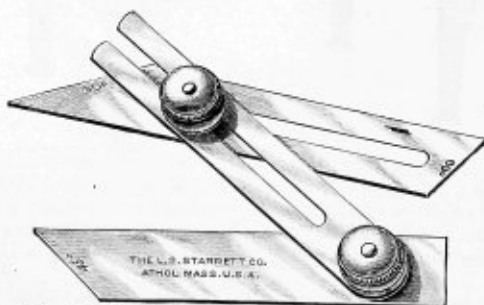
The cupboards on each side are $9\frac{1}{2}$ inches high, $28\frac{1}{2}$ inches long, 12 inches deep and have locks on the doors.

Two adjustable steel bench stops are furnished with this Bench only as well as castings and screws to attach bench legs to the floor.

BEVELS.



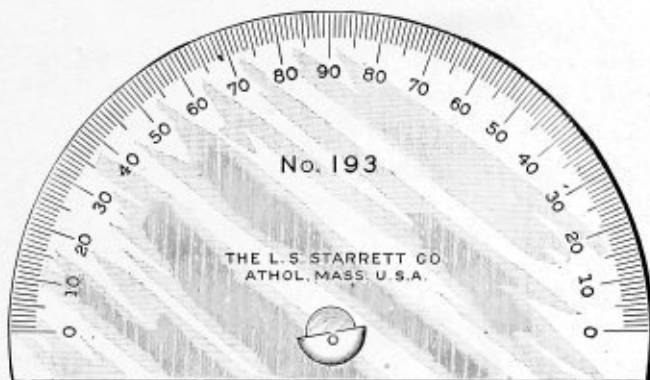
- 47 A 6 inch (length of stock $3\frac{1}{2}$ in.) \$1 25 each.
 47 B 9 inch (length of stock $4\frac{3}{4}$ in.) 1 50 each.
 47 C 12 inch (length of stock 6 in.) 1 75 each



The stock of this Bevel is about 4 inches long. No. 49 \$2 00 each.

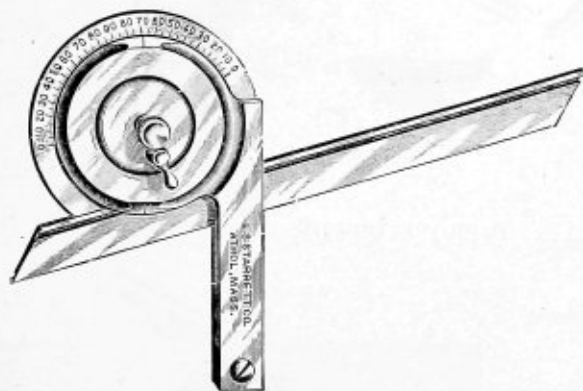
1 only 47 B-28 is all that is necessary.

BEVEL PROTRACTORS.



No. 193 \$1 00 each.

This protractor is used for setting Bevels or taking the degrees from set Bevels.



This tool is the Best
Bevel Protractor Made.

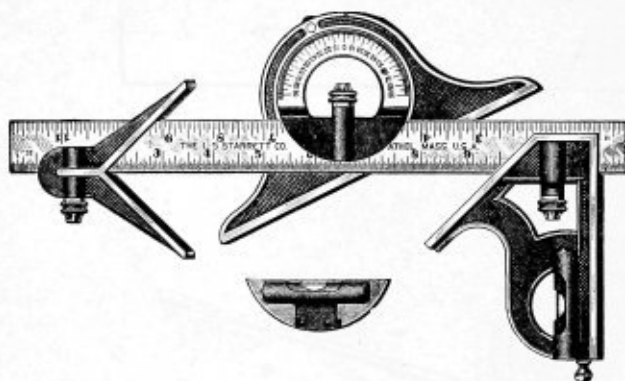
No. 360A.	7-inch	\$5 00
No. 360B.	7-inch in Leatherette case.....	5 75
No. 360C.	12-inch	6 00
No. 360D.	12-inch in Leatherette case.....	7 00
No. 360E.	Width both 7 and 12-inch blades.	6 50
No. 360F.	Same in Leatherette case.....	7 50
No. 360G.	Attachment, extra	1 00
No. 360B.	(7-inch in case) sent unless otherwise ordered.	

Be sure to affix page number, viz.: 1 only 360 D-29.

COMBINATION SETS.

An adjustable rule, held firmly at any point by a thumb nut, passes through a revolving turret which is nicely graduated in degrees from 0 to 90, both right and left, and can be accurately adjusted to show any angle.

A valuable auxiliary is made in the shape of a small level to be attached in place of the rule removed, forming an adjustable level to show any degree, thus greatly increasing the usefulness of the instrument.



No. 9.

With Hardened
Blade.

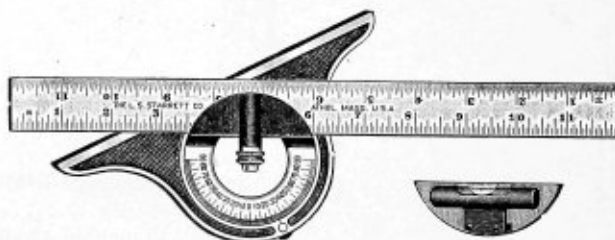
No.		Sets Complete
9A	9"	\$3 75
9B	12"	4 00
9C	18"	4 75
9D	24"	5 25

IMPROVED BEVEL PROTRACTORS.

No. 12.

With Hardened
Blade.

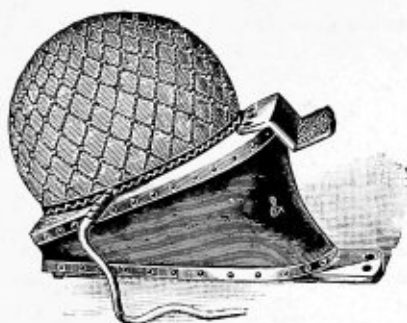
No.		Complete
12A	9"	\$2 75
12B	12"	3 00
12C	18"	3 50
12D	24"	4 00



Protractor Head only with Level attachment.....	\$2 00
Level only	25

Order viz.: 1 only Protractor Head -30.

FOOT BLOWERS.



Style No. 9, 9A or 9B.



Style No. 10, 10A or 10B.

A rubber disk forms the air reservoir and equalizes the pressure by its elasticity. By increasing the number of disks, a greater air pressure is obtained.

For larger blowpipes, or small melting furnaces, the No. 9A or No. 10A is employed. These have two disks, one superimposed upon the other, and give a greater quantity of wind at about one-half greater pressure than the smaller blowers.

For the largest blowpipes and melting furnaces up to a capacity of ten or twelve pounds of copper, the No. 9B or No. 10B is used. These are still larger, and give a heavier wind pressure, three disks being used. Either of these will furnish a blast capable of burning 60 feet of gas or more in a furnace, or upwards of 100 feet per hour in a blowpipe.

TABLE OF SIZES AND CAPACITY OF FOOT-BLOWERS.

		Size of Boards.	Diameter of Air Reservoir.	Pressure of Blast Per Inch.	Cubic Ft. of Air Per Hour.
No. 9 or 10.	Foot-Blower,	7 $\frac{3}{4}$ x 9	7 $\frac{1}{4}$ in.	1 lb.	190
No. 9A or 10A.	Foot-Blower,	10 x 11	9 in.	1 $\frac{1}{2}$ lbs.	330
No. 9B or 10B.	Foot-Blower,	11 $\frac{1}{2}$ x 13 $\frac{3}{4}$	11 in.	1 $\frac{3}{4}$ lbs.	625

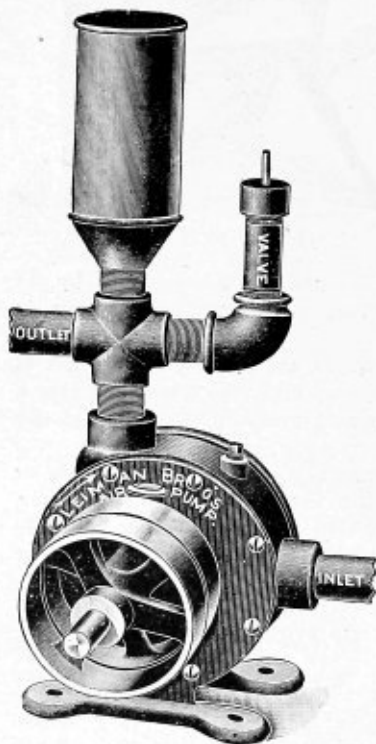
PRICES OF FOOT-BLOWERS.

			Blower.	Extra Disks.
No. 9.	Foot-Blower, with single disk,	9 in.	\$4 50	\$0 50
No. 9A.	Foot-Blower, with double disk,	12 in.	6 00	75
No. 9B.	Foot-Blower, with three disks,	14 $\frac{1}{2}$ in.	8 50	1 00
No. 10.	Foot-Blower, with single disk,	9 in.	5 50	50
No. 10A.	Foot-Blower, with double disk,	12 in.	7 00	75
No. 10B.	Foot-Blower, with three disks,	14 $\frac{1}{2}$ in.	9 50	1 00

Extra Nets, each, 35c.

PATENTED LEIMAN HIGH PRESSURE BLOWER.

Sent on Trial to Responsible Concerns.



IMPORTANT FACTS.

These blowers will deliver a **greater volume of air with higher pressure** than any blowers of equal size now on the market.

Simply constructed and have no delicate parts to wear out or cause trouble. All parts are interchangeable, and can be duplicated at small cost. Does not require the services of a mechanic to take the machine apart or assemble it.

Runs **noiseless in operation** whether new or old and without vibration.

They run at a slow speed and require very little power to drive them.

All sizes but A are furnished with a relief valve to regulate the pressure, and all with the exception of size A and B are furnished with an air tank. Inlet pipe and screen is furnished with sizes D, E, F and G.

Compressed air is now being used extensively for various purposes, and new uses are being found daily.

Mechanics have applied it successfully, where mechanism or other methods failed.

If in doubt about any proposition consult us, as we are prepared to give information as to how air pressure may be adapted for various uses, and the size blower required to obtain the best results.

See details on opposite page.

LEIMAN HIGH PRESSURE BLOWER.

Adapted for use with gas, oil, coal or wherever a steady blast is required under a pressure.

You May Need It—Investigate.

The following are a few of the purposes for which these blowers are now in use:

Melting of Metals,
Hardening,
Annealing,

Tempering,

Forging,

Brazing,

Soldering,

Cleaning,

Agitating Liquids,

Sand Blasting,

Fuel Oil Plants,

Glass Blowing and Bending,

Removing Paint,

Atomizing,

Heating, Ventilating,

Pneumatic Service,

Testing Gas Fixtures,

Burning Brands.

Size of Blower	Cubic Inches Delivered per Revolution	Maximum Speed Revolutions per Minute	Diameter of Pulleys	Face of Pulleys	Horse Power Required—Approximate	Lbs. Max'm Pressure to Sq. Inch	Size of Inlet and Outlet	Weight	Floor Space Inches	PRICE
A	17	600	4	1	1-10	10	1/2"	20	10x 6	\$17 00
B	30	600	4	1 1/4	1/8	10	3/4"	26	12x 8	23 00
C	80	400	5	2	1/4	10	1"	43	15x10	30 00
D	200	300	7	2 1/2	1/2	10	1 1/4"	76	19x15	45 00
E	400	250	12	3	1	10	1 1/2"	153	24x18	55 00
F	675	200	12	3	1 1/2	10	2"	250	28x22	80 00
G	1400	200	14	3	2 1/2	10	2 1/2"	400	31x24	130 00

Read description on opposite page.

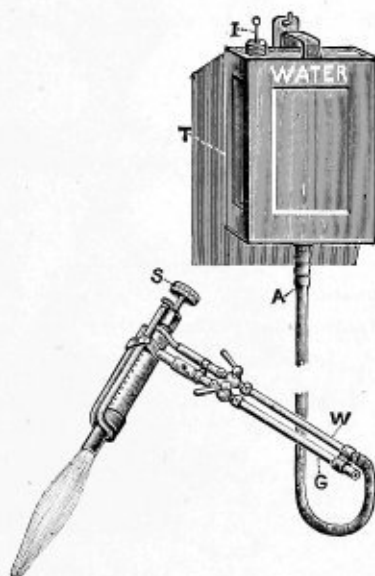
Wanted, viz.: 1 only B-33. Extremely simple way.

REVELATION BLOW PIPES.

Possess Features Never Before Known.

Nothing But Gas and Water Needed.

No Pressure Blower (of any kind) Needed.



Hang the Water Tank on the wall, at least 8 feet from the Blow Pipe. One gallon of water will give you full service for a day.

The Patented Blow Pipe will furnish the hottest known flame from a heavy to a needle point.

If you want the best and the most economical Blow Pipe made,

Buy a Revelation.

Each one fully guaranteed.

Net Price\$7 50

Price of Tubing, per foot.....15c

Including Water Tank (but no Tubing). Water Tank, One Gallon Capacity.

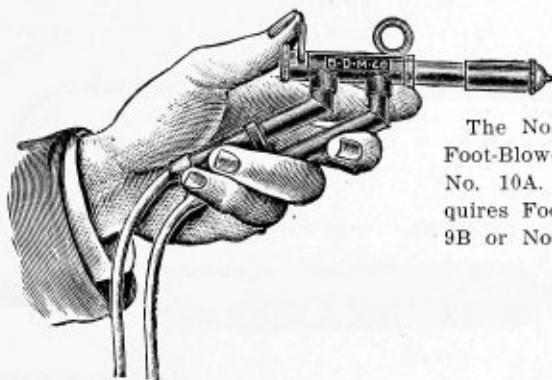
Required length of water tubing eight feet of $3\frac{1}{8}$ inch.

Order, viz: 1 only Revelation -34.

AUTOMATON BLOW PIPES.

For Illuminating Gas Only.

The engraving shows the hand Blow Pipe with both air and gas tubes underneath, forming a most convenient pattern for small work, brazing, annealing, etc.



The No. 6B requires Foot-Blower No. 9A or No. 10A. No. 6C requires Foot-Blower No. 9B or No. 10B.

No. 6B	\$3 50	Requires $\frac{3}{8}$ " Gas Supply.
No. 6C	5 00	Requires $\frac{1}{2}$ " Gas Supply.

Metal Stand fitted with No. 6B Pipe, \$4 00 each.

Metal Stand fitted with No. 6C Pipe, 5 50 each.

No. 6A mounted on a stand, with a universal ball joint, so as to enable it to be used at any angle, or in any position.

A slight motion from side to side of the lever changes the power and character of the flame instantly as required, or stops the blast without extinguishing the flame, the blow pipe being both self-lighting and self-adjusting. No. 6A requires Foot-Blower No. 9A or No. 10A.

Requires $\frac{3}{8}$ " Gas Supply. \$4 00 each.



No. 6A.

Read article at bottom of page 20. It's full of value.

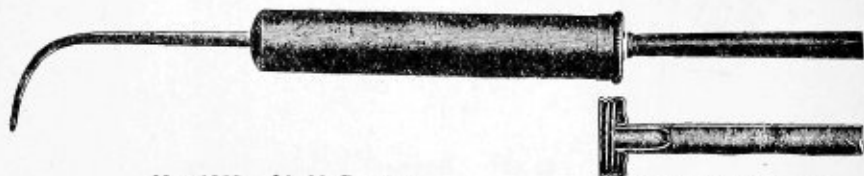
BLOW PIPES—"PLAIN BRASS."



Number,	1815	1816	1817	1818	1819	1820
Lengths,	7"	8"	9"	10"	11"	12"
Dozen,	\$1 15	\$1 30	\$1 45	\$1 60	\$1 70	\$1 90



Number,	1822	1823	1824	1825	1826
Lengths,	8"	9"	10"	11"	12"
Dozen,	\$2 90	\$3 00	\$3 15	\$3 30	\$3 45



No. 1829. \$6 00 Dozen.

Sectional View of Mouthpiece.

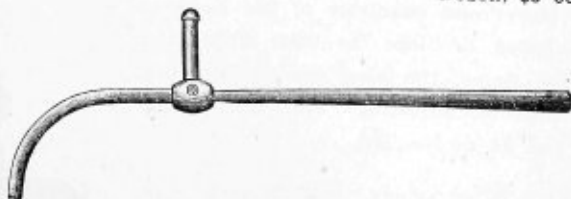
This Blow Pipe has a mouthpiece made of aluminum, the interior is so arranged as to prevent the saliva from entering the wick, a feature that will appeal to the judgment of every practical workman.



No. 1840. For Gas and Air combined.
Length, 6". Dozen, \$6 00.



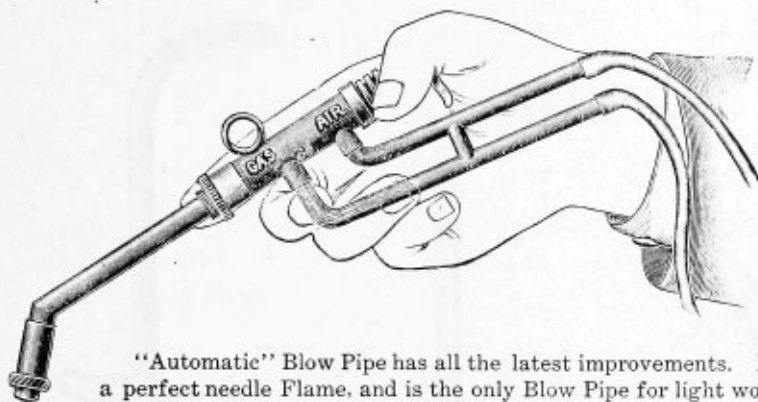
No. 1835. For Gas and Air, to screw
on gas bracket. Length, 5½".
Dozen, \$5 00.



No. 1845. For Gas and Air combined. Length, 9". Dozen, \$6 00.

How to order, viz.: 1 Dozen 1817-36. This method saves you much valuable time.

BLOW PIPES.



"Automatic" Blow Pipe has all the latest improvements. It will give a perfect needle Flame, and is the only Blow Pipe for light work.

\$2 50 each.

Handsomely Finished. Nickel Plated.



\$2 50 each.

MOUTH BLOW PIPES.

Burning Alcohol.

No. 58 is made of Brass, nickel plated. It is easily carried in pocket or tool bag. A metal cap prevents evaporation.

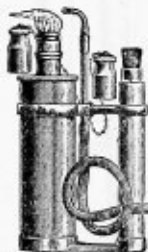
Capacity, $\frac{1}{4}$ pint.

Consumption, $\frac{1}{8}$ pint per hour.

No. 79 has a vial contained in the handle for acid, doing away with carrying an extra acid bottle to spill or break.



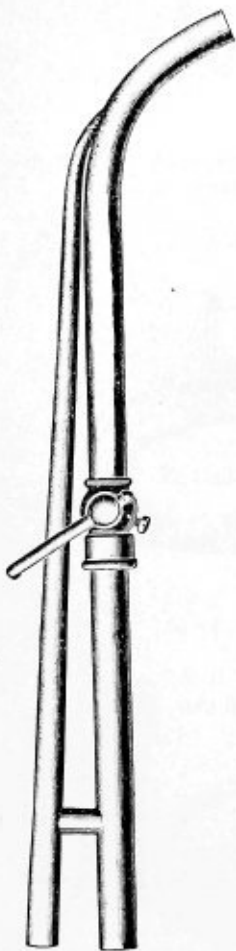
Gem, No. 58.
\$2 00 each.



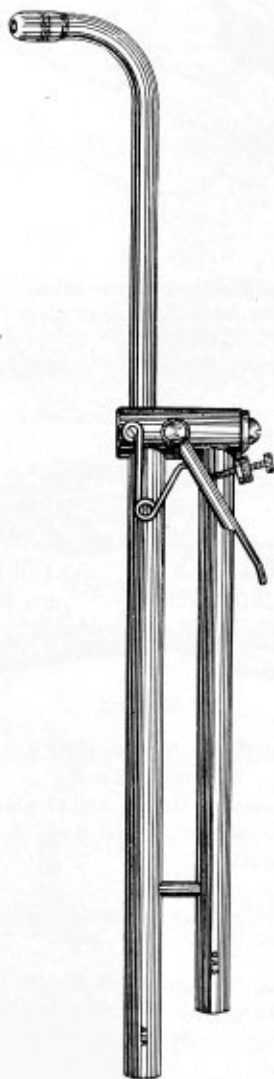
Willson, No. 79.
\$5 00 each.

Write orders simple way, viz.: 1 only Matchless -37, or 1 only No. 58-37.

BLOW PIPES.



No. A. \$1 50 each.



No. B. \$3 00 each.



No. C. \$3 00 each.

BRAZING BLOW PIPES (BRASS).

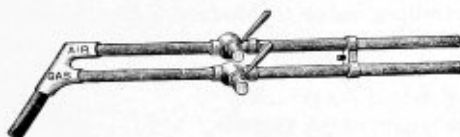
For Illuminating Gas Only.

For Light or Heavy Soldering, Brazing, Annealing, Etc.



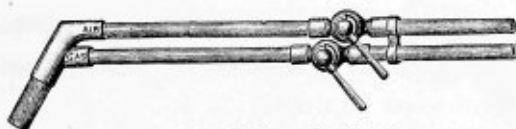
No. 1770 each \$2 50

Small size, with two stop-cocks and pilot light, $\frac{3}{16}$ inch air tube and $\frac{3}{8}$ inch gas tube; length, 11 inches.



No. 1780 each \$3 00

Small size, with two stop-cocks, $\frac{3}{16}$ inch air tube and $\frac{1}{16}$ inch gas tube; length, 14 inches.



No. 1785 each \$3 50

Medium size, with two stop-cocks, $\frac{1}{8}$ inch air tube and $\frac{5}{8}$ inch gas tube; length, 16 inches.



No. 1790 each \$4.25

Large size, with two stop-cocks, $\frac{1}{2}$ inch air tube and 1 inch gas tube; length, 18 inches.

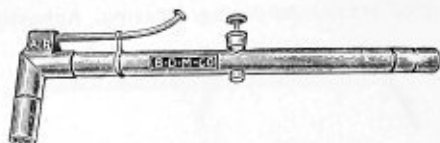
Note—You can check your Bills in 1-10 the time if you will write your orders the simple (new) way—viz.:

1 only 1780-39.

The first number represents the item wanted, the last number represents the page it is on.

GASOLINE GAS BLOW PIPE.

Non-extinguishable.



No. 6 G each \$2 50

For Light Soldering and Melting Only.

This blowpipe exclusively used for gasoline gas. A new method of regulating the size of the flame has been adopted, which requires a simple partial rotation of the controlling valve to produce a fine, pointed flame, up to one, three or four inches long. The large brush flame is obtained by depressing the valve stem.

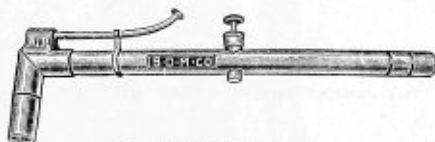
NATURAL GAS BLOW PIPES.

Non-Extinguishable.



No. 8 G \$4 25 each

This blowpipe is made of iron throughout, except the cocks, which are of brass. It is designed for natural gas, but will work equally well with illuminating gas. Requires $\frac{3}{4}$ " gas supply.



No. 6 H \$2 50 each.

This blowpipe exclusively used for natural gas, it has been improved by the substitution for the ordinary air and gas outlet tubes, of a concentrating chamber surrounding the air jet, and a deflecting sleeve covering both gas and air outlets.

Order this way—1 only No. 6 G-40.

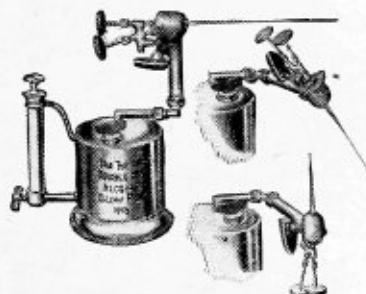
BLOW TORCHES.

The No. 100 Torch burns wood alcohol. This Torch produces a needle-pointed flame, suitable for all kinds of fine soldering, such as is required by Jewelers, Opticians, Dentists and Electricians. The Double Jet construction of the burner generates the maximum degree of heat from the fuel, over 3,000° F. The flame is perfectly clean and non-oxidizing. The burner is swiveled so that it can be turned in any position.

Capacity, One Pint. Consumption $\frac{1}{4}$ Pint Per Hour.



No. 100 \$7 00
each.



No. 8 \$11 00 each.

The construction of the No. 8 Torch Burner mixes the alcohol fuel with air in correct proportions, and perfect combustion is secured, resulting in a temperature of over 3,000° F.

The air pressure in the reservoir produced by the pump in handle gives a constant clean blast flame sufficient to melt 25 per cent platinum solder and suitable for fine soldering.

Capacity One Pint—Consumption $\frac{1}{4}$
Pint Per Hour.

Gasoline is the fuel for the No. 60 Torch.

"Light with a Match"
It Makes Its Own Gas.

This is the smallest which can be constructed and give perfect service.

Capacity One-Half Pint—Consumption $\frac{1}{4}$ Pint Per Hour.

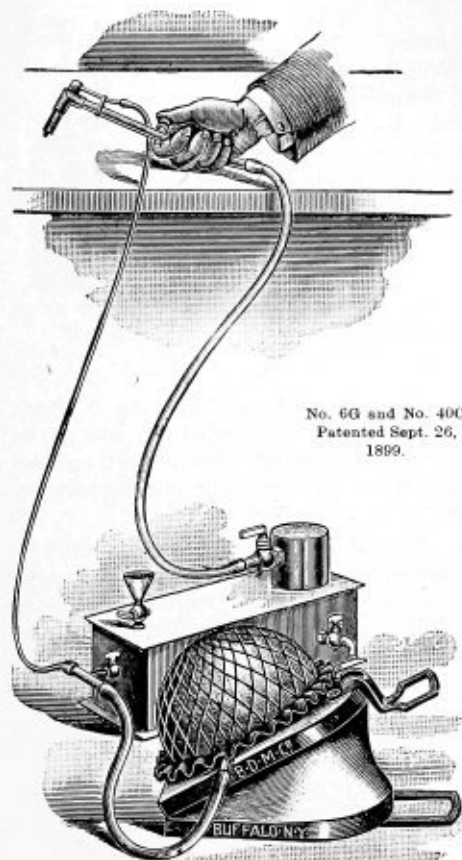
The air force pump as shown in cut is separate from the torch, thus reducing the size of this unique device to a minimum.

Use 74 degree Gasoline.



No. 60 \$2 75 each.

GASOLINE BLOW PIPE OUTFIT.



These well known Generators have been in use for many years and have given universal satisfaction in supplying a cheap and efficient means of utilizing the vapor of gasoline for furnace and blowpipe work.

No. 40C Size, 4x4x10 inches; capacity, about one quart of gasoline.

No. 44. Size, 10 x 10 x 18 inches capacity, about one and a half gallons.

PRICES:

No. 6G Blowpipe	\$2 50
No. 9 Foot Blower	4 50
No. 40C Generator	6 00
No. 44 Generator	15 00
No. 6G Blow pipe,	
No. 9 Foot-Blower, No.	
40C Generator, Rubber	
Connecting Tubing	
and one Reducer, com-	
plete, ready for use	14 00

These Generators can be used where gas is not available. The vapor produced by them gives a flame and heat of absolute purity for the most delicate chemical operations where gas cannot be used owing to the presence of sulphur and other impurities.

To charge the Generator, pour gasoline in the funnel cock until it overflows at the

small tap in the side of the Generator, near the bottom; then close the funnel cock and also the overflow tap.

Seventy-four degree or 76 degree gasoline, such as is used in "vapor stoves" for culinary purposes, is suitable for use in these Generators. The heavier hydro carbons, commonly sold as naphtha, will not give satisfaction.

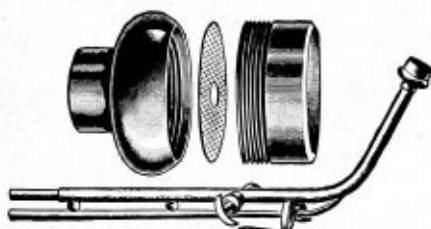
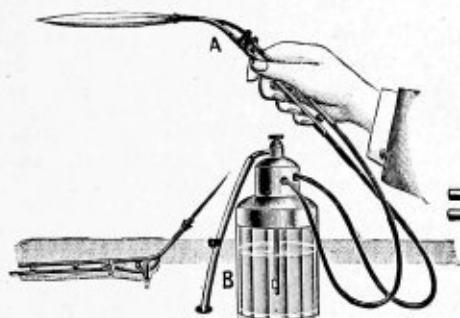
At the conclusion of an operation close all taps on the Generator. It can be left for any length of time, ready for instant use.

Note.—The Gasoline Gas Generator is useless except with a supply of air under pressure. It cannot be used with draft furnaces.

SAMS' GASOLINE BLOWPIPE.

"Improved Safety Outfit."

Handsomely finished; simple in construction and perfectly safe.

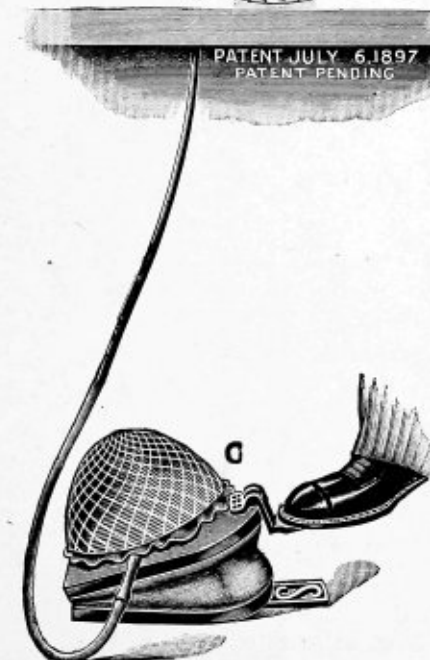


Blowpipe \$2 50 each.

This pipe will produce either a heavy brush flame or the finest needle point.

The thumb-valve remains where set, maintaining any size flame. Instantaneously changed, if desired.

The M-shape clip shown enables hand-piece to stand alone.



Jewelers' Outfit Complete.....\$13 00
 Outfit, without bellows..... 8 50
 Foot bellows (C) only..... 4 50



GENERATOR.

\$6 00 each.

New external air valve on top of generator regulates air supply, insuring correct mixture for true blue flame.

There are no mysteries, you can see the condition of your gasoline at all times.

WATCH CASE (SQUARE) BROACHES.

All Sizes are $2\frac{3}{16}$ inches long.Cutting Edge of all sizes $1\frac{3}{4}$ inches long.

Number of Broach	4-0	3-0	2-0	1-0	1	$1\frac{1}{2}$
Diameter at Small End	.013"	.015"	.017"	.019"	.021"	.023"
Number of Broach	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$
Diameter at Small End	.025"	.027"	.029"	.031"	.035"	.039"

All Sizes 4-0 to 3 inclusive, \$2 00 per gross.

All Sizes $3\frac{1}{2}$ to $4\frac{1}{2}$ inclusive, 2 50 per gross.

WATCH CASE PINS.

The taper of pins—.010" to the inch.

Number of Pin	4-0	3-0	2-0	1-0	1	$1\frac{1}{2}$
Diameter at Small End	.014"	.016"	.018"	.020"	.022"	.024"
Number of Pin	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$
Diameter at Small End	.026"	.028"	.030"	.032"	.036"	.040"

Brass Pins, any size, \$2 00.

German Silver Pins, any size, 3 50.

FIVE-CORNERED SWISS PIVOT BROACHES.

Polished and Tempered.

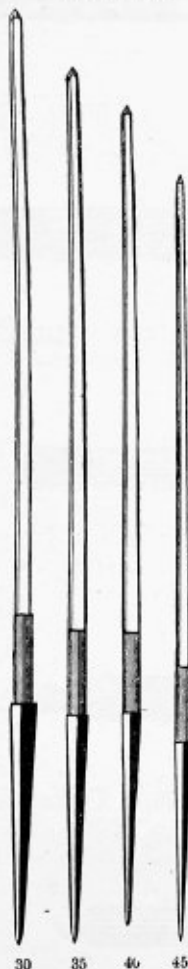
Nos.,	0 to 2	3	4	5	6	7	8	9	10	11	12
Gross,	\$1 70	\$1 90	\$2 20	\$2 50	\$2 75	\$3 00	\$3 50	\$4 00	\$4 50	\$4 85	\$5 25
Doz.,	15	18	20	22	25	28	30	35	40	45	50

Order viz.: 1 Gross 2-0 Broaches -44.

ENGLISH BROACHES OR REAMERS.

Lengths of Cutting Edge, 4" 4½" 4¾" 5" 5½" 6"						
Diameter at Large End, ⅜ ⅝ ⅞ 1 1⅛ 1⅜ 1½						
Price each,	\$0 18	20	25	28	30	35

The adjoining illustrations are exact sizes of respective numbers. Diameters given are taken at the largest end of the cutting edge itself. Gauged according to Twist-Drill and Steel Wire Gauge. See



Nos., 1 to 4	5 to 9
Gross, \$19 00	\$18 00
Doz., 2 00	1 75
Nos., 10 to 14	15 to 19
Gross, \$13 50	\$12 00
Doz., 1 50	1 25
Nos., 20 to 24	25 to 29
Gross, \$10 80	\$10 00
Doz., 1 10	1 00
Nos., 30 to 34	35 to 39
Gross, \$8 00	\$7 50
Doz., 80	75
Nos., 40 to 44	45 to 49
Gross, \$7 00	\$6 50
Doz., 70	65
Nos., 50 to 53	54 to 57
Gross, \$5 50	\$5 00
Doz., 55	50
Nos., 58 to 70	71 to 80
Gross, \$4 00	\$3 50
Doz., 45	40

PIVOT.

Gross, \$3 00
Doz., 35

Sets of 12 assorted from 20 to 70, \$0 75 per Set.
 Sets of 12 assorted from 40 to 70, 60 per Set.

Write orders, viz.: 1 Dozen No. 55-45.

BROACH HOLDERS.

Illustrations Are Full Size.



No. 181

Long rubber handle. Finely tempered steel jaws; nut nicely blued. A well-made and durable tool.

Price, 30c



No. 190

Rubber handle, hollow. The jaws of this vise close very small, will grip the smallest wire.

Price, 30c



No. 191

Hollow rubber handle. Finely tempered steel jaws; knurled nut of tool steel nicely blued.

Price, 35c



PIN VISE.

Fluted hollow brass handle; fine steel jaws and nut. A good tool for the price.

No. 210 Price, brass handle, 25c

No. 211 Price, nicked handle, 30c



No. 212 Similar to No. 210, but larger. Price, brass handle, 30c

No. 213 Price, nicked handle, 35c

You can avoid errors, also save valuable time by writing your orders viz.:

1 only No. 190-46, or 1½ Dozen No. 210-46.

BROACH HOLDERS.



Illustration Actual Size.

No. "A" Imported Holder, with Ebonized Wood Hollow Handle....\$3 50 Dozen



No. "B" Illustration Actual Size. Imported Holder with Ebonized Wood Hollow Handle \$4 00 Dozen.



No. "C" Illustration Actual Size.....\$2 50 Dozen

No. "D" Same style, 3¼" long 2 00 Dozen



WITH SLIDE AND EBONY HANDLE.

	No. E	No. G	No. H	No. J
Length.....	3"	3½"	4"	4½"
Dozen.....	\$1 75	\$2 00	\$2 25	\$2 50

DOUBLE END BROACH HOLDER.

Brass Hollow Handle, Brass Chuck and Steel Jaws.



This is an Imported Holder, Beautifully Made. The nut has a square head, a desirable feature.

No. "K" \$6 00 Dozen.

Order by new method, viz: 1 Doz. G-47. Letter "G" tells us the item wanted; the number 47 tells us the page item is on.

BRUSHES

We are manufacturers of brushes for the several lines of trade, viz:—
Art Metal Workers, Brass Goods Manufacturers, Fine Tool Makers, Instrument
Manufacturers, Jewelers, Nickel-Platers, Optical Goods Manufacturers, Op-
ticians, Polishers, Silversmiths, Stove Manufacturers, also Watch Case Manu-
facturers.


Every Brush Made by Us Possesses the "Best" of Materials and Workmanship.

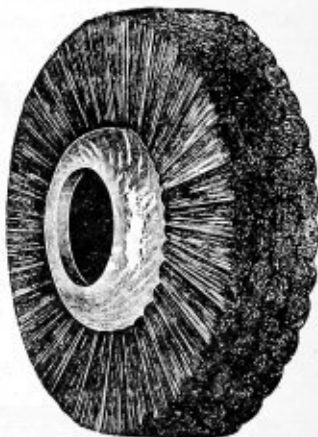


If Our Goods Please You, Tell Others
If They Don't, Tell Us

This illustration represents a **Converging Shape Wheel Brush**
Style Most Commonly Used



This illustration  Represents an **Upright Shape Wheel Brush**.
We never send this shape unless it is speci-
fied, or the list of certain Brushes specify
this shape. Read the "Note" at Bottom of
Every Brush Page.



Every brush made by us has its own individual number, designating its
kind, size and embodying every detail. Our system of numbering overcomes
the many vexatious errors which exist in all other systems.

Order by respective Brush Numbers and you will always be sure to get
Exactly What You Want.

We make special brushes of all kinds—Send us your old Brush also facts
and get **Our Prices** before placing your orders elsewhere.

THE AMERICAN OIL & SUPPLY CO.

WHITE "RUSSIA" BRISTLE WHEEL BRUSHES

For Jewelers, Opticians, Platers, Polishers, Silversmiths, Watch and Watch Case Makers.

DIAMETER OF BRUSH.		DIAMETER OF BLOCK.	NO. OF ROWS.	FIRST QUALITY.		SECOND QUALITY.		THIRD QUALITY.	
				No. of Brush.	Per Dozen.	No. of Brush.	Per Dozen.	No. of Brush.	Per Dozen.
1½"	x	⅝"	{	1	100 \$.85	304 \$.77		502 \$.65	
				2	101 1.25	305 1.13		503 .75	
				3	102 1.90	306 1.45		504 1.15	
				4	103 2.40	307 2.10		505 1.50	
1¾"	x	¾"	{	1	104 .90	308 .77		506 .65	
				2	105 1.25	309 1.15		507 .80	
				3	106 2.00	310 1.75		508 1.20	
				4	107 2.50	311 2.25		509 1.55	
2"	x	⅞"	{	1	108 .95	312 .80		510 .70	
				2	109 1.40	313 1.20		511 .90	
				3	110 2.10	314 1.80		512 1.30	
				4	111 2.80	315 2.40		513 1.70	
2¼"	x	1"	{	1	112 1.00	316 .80		514 .75	
				2	113 1.50	317 1.25		515 .95	
				3	114 2.25	318 1.88		516 1.35	
				4	115 3.00	319 2.50		517 1.75	
2½"	x	1¼"	{	1	116 1.25	320 1.00		518 .85	
				2	117 2.00	321 1.50		519 1.00	
				3	118 3.00	322 2.25		520 1.40	
				4	119 4.00	323 3.00		521 2.00	
3"	x	1½"	{	1	120 1.90	324 1.30		522 1.15	
				2	121 2.50	325 1.75		523 1.40	
				3	122 3.75	326 2.60		524 2.00	
				4	123 5.00	327 3.50		525 2.75	
3½"	x	2"	{	1	124 2.25	328 1.45		526 1.30	
				2	125 3.00	329 2.00		527 1.80	
				3	126 4.50	330 3.00		528 2.60	
				4	127 6.00	331 4.00		529 3.00	

Note—Converging Style Always Sent Unless Upright Style is Specified.

BLACK "CHINA" BRISTLE WHEEL BRUSHES

For Jewelers, Platers, Polishers, Opticians, Silversmiths, Watch and Watch Case Makers.

DIAMETER OF BRUSH.	DIAMETER OF BLOCK.	NO. OF ROWS.	FIRST QUALITY		SECOND QUALITY		THIRD QUALITY	
			No. of Brush.	Per Dozen.	No. of Brush.	Per Dozen.	No. of Brush.	Per Dozen.
1½"	X	⅝"	1	703 \$.70	906 \$.60	1101 \$.50		
			2	704 1.10	907 .95	1102 .70		
			3	705 1.50	908 1.20	1103 1.05		
			4	706 1.90	909 1.70	1104 1.35		
1¾"	X	¾"	1	707 .75	910 .65	1105 .55		
			2	708 1.15	911 1.00	1106 .75		
			3	709 1.60	912 1.40	1107 1.10		
			4	710 2.00	913 1.80	1108 1.40		
2"	X	⅞"	1	711 .80	914 .70	1109 .60		
			2	712 1.20	915 1.05	1110 .80		
			3	713 1.70	916 1.45	1111 1.15		
			4	714 2.25	917 1.90	1112 1.55		
2¼"	X	1"	1	715 .85	918 .75	1113 .65		
			2	716 1.25	919 1.10	1114 .85		
			3	717 1.80	920 1.60	1115 1.25		
			4	718 2.40	921 2.00	1116 1.60		
2½"	X	1¼"	1	719 1.00	922 .85	1117 .70		
			2	720 1.65	923 1.25	1118 .95		
			3	721 2.40	924 1.80	1119 1.35		
			4	722 3.20	925 2.40	1120 1.80		
3"	X	1½"	1	723 1.50	926 1.05	1121 .90		
			2	724 2.10	927 1.50	1122 1.25		
			3	725 3.00	928 2.25	1123 1.80		
			4	726 4.00	929 2.80	1124 2.40		
3½"	X	2"	1	727 1.80	930 1.20	1125 1.00		
			2	728 2.40	931 1.85	1126 1.60		
			3	729 3.60	932 2.70	1127 2.25		
			4	730 4.80	933 3.50	1128 2.75		

Note—Converging Style Always Sent Unless Upright Style is Specified.

GOAT AND MANE HAIR WHEEL BRUSHES—EXTRA QUALITY.

For Jewelers, Platers, Polishers, Opticians, Silversmiths, Watch and Watch Case Makers.

DIAMETER OF BRUSH	DIAMETER OF BLOCK	NO. OF ROWS.	WHITE MANE HAIR MEDIUM STIFF.		WHITE GOAT HAIR SOFT.	
			No. of Brush.	Per Dozen.	No. of Brush.	Per Dozen.
1½"	x	5⁄8"	1	1301 \$.70	1507 \$.80	
			2	1302 1.10	1508 1.20	
			3	1303 1.50	1509 1.65	
			4	1304 2.15	1510 2.35	
1¾"	x	¾"	1	1305 .70	1511 .80	
			2	1306 1.10	1512 1.20	
			3	1307 1.75	1513 1.90	
			4	1308 2.25	1514 2.45	
2"	x	7⁄8"	1	1309 .75	1515 .85	
			2	1310 1.20	1516 1.30	
			3	1311 1.85	1517 2.00	
			4	1312 2.50	1518 2.70	
2¼"	x	1"	1	1313 .80	1519 .90	
			2	1314 1.25	1520 1.40	
			3	1315 2.00	1521 2.20	
			4	1316 2.75	1522 2.90	
2½"	x	1¼"	1	1317 1.00	1523 1.10	
			2	1318 1.60	1524 1.75	
			3	1319 2.40	1525 2.65	
			4	1320 3.50	1526 3.80	
3"	x	1½"	1	1321 1.20	1527 1.50	
			2	1322 1.80	1528 2.00	
			3	1323 3.00	1529 3.30	
			4	1324 4.00	1530 4.50	
3½"	x	2"	1	1325 1.50	1531 1.75	
			2	1326 2.25	1532 2.50	
			3	1327 3.50	1533 3.85	
			4	1328 4.50	1534 5.00	

Note—Converging Style Always Sent Unless Upright Style is Specified.

WHITE "RUSSIA" BRISTLE LATHE BRUSHES

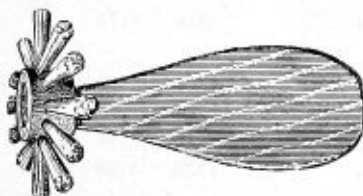
For Jewelers' Use.

AN "END BRUSH"



Diameter of Hub Brush End.	Number of Knots	Length of Bristle.	Extreme Length "Approx."	FIRST QUALITY.		SECOND QUALITY.	
				No. of Brush.	Per Dozen.	No. of Brush.	Per Dozen.
$\frac{3}{8}$ "	1	$\frac{7}{8}$ "	$2\frac{1}{2}$ "	1700	\$.50	1903	\$.45
$\frac{3}{8}$ "	3	$\frac{7}{8}$ "	$2\frac{1}{2}$ "	1701	.55	1904	.50
$\frac{3}{8}$ "	5	$\frac{7}{8}$ "	$2\frac{1}{2}$ "	1702	.60	1905	.55
$\frac{3}{8}$ "	7	$\frac{7}{8}$ "	$2\frac{1}{2}$ "	1703	.70	1906	.60
$\frac{1}{2}$ "	8	1"	$2\frac{5}{8}$ "	1704	.70	1907	.60
$\frac{5}{8}$ "	10	1"	$2\frac{7}{8}$ "	1705	.80	1908	.70
$\frac{3}{4}$ "	12	$1\frac{1}{8}$ "	3"	1706	.90	1909	.80
$\frac{7}{8}$ "	23	$1\frac{1}{8}$ "	$3\frac{1}{8}$ "	1707	1.00	1910	.90
1"	19	$1\frac{1}{8}$ "	$3\frac{1}{2}$ "	1708	1.15	1911	1.00

"STAR" DIE BRUSH



Diameter of Brush.	Number of Rows.	Extreme Length.	FIRST QUALITY.		SECOND QUALITY.	
			No. of Brush.	Per Dozen.	No. of Brush.	Per Dozen.
1"	1	$1\frac{3}{4}$ "	2104	\$1.30	2110	\$1.00
1"	2	$1\frac{3}{4}$ "	2105	2.00	2111	1.75

Note—Always order by respective Brush number and avoid error. All other goods, simply specify item or its respective number or size, and **do not** forget to always affix page number; it will save you much time and avoid error.

BRISTLE "LATHE" BRUSHES.

For "Watch-Case" Makers Use.

This illustration represents a Straight Shape
Inside Wheel Brush.



MADE OF "EXTRA QUALITY" WHITE RUSSIA BRISTLE.

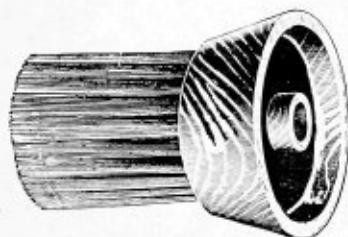
Diameter of Brush.....	1½"	1½"	1¾"	2"
Diameter of Block.....	¾"	¾"	¾"	¾"
Number of Brush.....	2310	2311	2312	2313
Price per Dozen.....	\$1.55	\$1.65	\$1.75	\$2.00

Note—All Diameters have two Rows of Bristles.

MADE OF "SECOND QUALITY" OF WHITE RUSSIA BRISTLE.

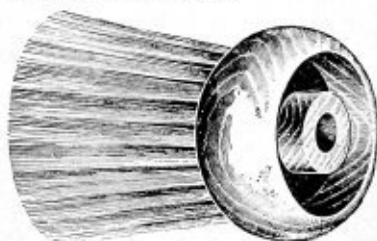
Diameter of Brush.....	1½"	1½"	1¾"	2"
Diameter of Block.....	¾"	¾"	¾"	¾"
Number of Brush.....	2355	2356	2357	2358
Price per Dozen.....	\$1.40	\$1.50	\$1.60	\$1.75

Note—All Diameters have two Rows of Bristles.



Upright.

INSIDE END BRUSHES.



Converging.

MADE OF "EXTRA QUALITY" OF GREY RUSSIA BRISTLE.

Face Diameter of Brush.....	¾"	1½"
Diameter of Block.....	1"	1¾"
Number of Brush.....	2530	2531
Price per Dozen.....	\$2.25	\$2.50

Note—Both sizes are made with four Rows of Bristles.

MADE OF "SECOND QUALITY" OF GREY RUSSIA BRISTLE.

Face Diameter of Brush.....	¾"	1½"
Diameter of Block.....	1"	1¾"
Number of Brush.....	2545	2546
Price per Dozen.....	\$1.80	\$2.00

Note—Both sizes are made with four Rows of Bristles.

Please Do Not Fail When Ordering Brushes, Simply Specify Their Respective Numbers. By So Doing You Will Avoid Errors.

GREY "RUSSIA" BRISTLE WHEEL BRUSHES.

Made expressly for Polishers and Watch Case Manufacturers Generally.

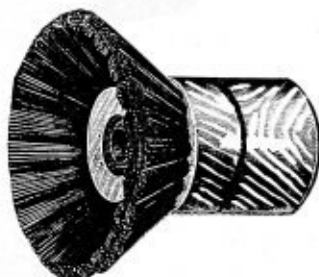
THESE ARE ALL STIFF BRUSHES.			EXTRA QUALITY.		SECOND QUALITY.	
Diameter of Brush.	Diameter of Block.	Number of Rows.	No. of Brush.	Per Dozen.	No. of Brush.	Per Dozen.
1 5/8"	5/8"	2	2703	\$1.10	2907	\$1.00
1 3/4"	3/4"	2	2704	1.20	2908	1.10
1 7/8"	3/4"	3	2705	1.70	2909	1.55
2 1/8"	1"	2	2706	1.30	2910	1.20
2 3/8"	1"	3	2707	2.00	2911	1.80
2 1/2"	1"	4	2708	2.70	2912	2.45
2 1/2"	1 1/4"	2	2709	1.80	2913	1.60
2 5/8"	1 1/4"	3	2710	2.75	2914	2.50
2 3/4"	1 1/4"	4	2711	3.65	2915	3.30
3"	1 1/2"	2	2712	2.25	2916	2.00
3"	1 1/2"	3	2713	3.40	2917	3.05
3 1/8"	1 3/4"	3	2715	3.75	2919	3.40
3 1/8"	1 7/8"	2	2716	2.50	2920	2.25
3 1/4"	1 1/4"	5	2717	5.00	2921	4.50
3 1/4"	1 1/2"	4	2719	4.55	2923	4.00
3 1/4"	1 7/8"	2	2720	2.60	2924	2.35
3 1/4"	1 7/8"	3	2722	3.90	2926	3.50
3 1/2"	1 1/2"	5	2724	5.75	2928	5.00
3 1/2"	1 5/8"	6	2725	7.00	2929	6.25
3 1/2"	1 7/8"	4	2727	4.50	2931	4.00
3 1/2"	2"	2	2728	2.70	2932	2.45
3 1/2"	2"	3	2729	4.00	2933	3.60
3 5/8"	2"	4	2730	5.25	2934	4.75
3 3/4"	1 3/4"	5	2731	6.25	2935	5.75
3 3/4"	1 3/4"	6	2732	8.00	2936	7.25
4"	2"	5	2733	8.00	2937	7.00
4"	2"	6	2734	9.50	2938	8.50
4 3/4"	2 1/4"	5	2735	10.00	2939	8.50
4 3/4"	2 1/4"	6	2736	12.00	2940	10.75
5"	3"	4	2737	10.50	2941	9.50
5 5/8"	2 1/2"	7	2738	17.00	2942	11.00
6 3/8"	2 1/2"	7	2739	18.00	2943	12.00

Note—Converging Style Always Sent Unless Upright Style is Specified.

BRISTLE "CUP" BRUSHES

For Watch Case Makers' Use.

Diameter of Brush.	Diameter of Block.	Number of Rows.	FIRST QUALITY OF WHITE RUSSIA BRISTLE.		SECOND QUALITY OF WHITE RUSSIA BRISTLE.		THIRD QUALITY OF WHITE RUSSIA BRISTLE.	
			No. of Brush.	Per Dozen.	No. of Brush.	Per Dozen.	No. of Brush.	Per Dozen.
1 1/4"	1"	2	3103	\$2.75	3125	\$2.25	3150	\$1.50
1 1/2"	1"	2	3104	2.75	3126	2.25	3151	1.50
1 3/4"	1"	2	3105	2.75	3127	2.25	3152	1.50
2"	1"	2	3106	2.75	3128	2.25	3153	1.50



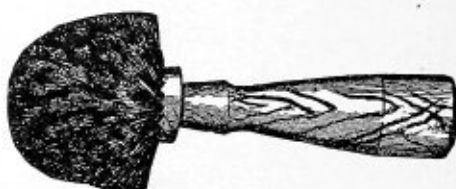
This Illustration represents a "CUP SHAPE" Brush—as made for Watch Case Makers: "BUY THE BEST." IT PAYS.

Diameter of Brush.	Diameter of Block.	Number of Rows.	EXTRA QUALITY OF GREY RUSSIA BRISTLE.		SECOND QUALITY OF GREY RUSSIA BRISTLE.	
			No. of Brush.	Per Dozen.	No. of Brush.	Per Dozen.
1 1/8"	5/8"	2	3305	\$1.65	3507	\$1.40
1 1/4"	5/8"	2	3306	1.65	3508	1.40
1 1/4"	3/4"	2	3307	1.65	3509	1.40
1 1/4"	1"	2	3308	2.15	3510	1.80
1 1/4"	1"	3	3309	2.50	3511	2.00
1 1/2"	5/8"	2	3310	1.65	3512	1.40
1 1/2"	3/4"	2	3311	1.65	3513	1.40
1 1/2"	1"	2	3312	2.15	3514	1.80
1 1/2"	1"	3	3313	2.50	3515	2.00
1 5/8"	3/4"	1	3314	1.30	3516	1.15
1 3/4"	5/8"	2	3315	1.65	3517	1.40
1 3/4"	3/4"	2	3316	1.65	3518	1.40
1 3/4"	1"	2	3317	2.15	3519	1.80
1 3/4"	1"	3	3318	2.50	3520	2.00
2"	1"	2	3319	2.15	3521	1.80
2"	1"	3	3320	2.50	3522	2.00

GOBLET-SHAPED BRISTLE BRUSHES.

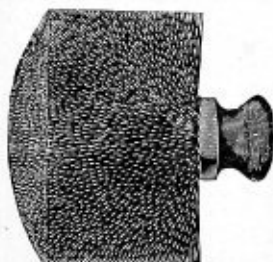
For Silversmiths, Etc.

MADE OF GREY RUSSIA BRISTLE OF EXTRA QUALITY.

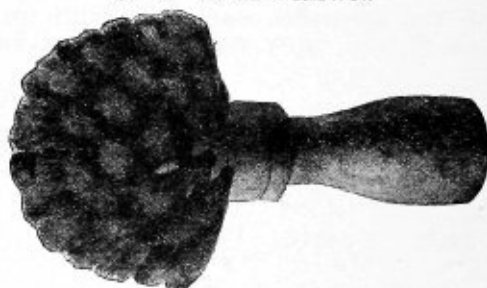
SHORT HUB BRUSH
CLOSED WIRE DRAWN.

No.	Rows.	Diam. of Block.	Diam. of Brush.	Dozen.
4303	6	$\frac{3}{4}$ "	$2\frac{1}{2}$ "	\$ 4.50
4304	6	$\frac{3}{4}$ "	$2\frac{3}{4}$ "	5.00
4305	5	$1\frac{1}{4}$ "	$3\frac{1}{2}$ "	5.50
4306	5	$1\frac{1}{4}$ "	$3\frac{3}{4}$ "	6.00
4307	5	$1\frac{1}{2}$ "	$4\frac{1}{2}$ "	7.50
4308	5	$1\frac{1}{2}$ "	$4\frac{3}{4}$ "	8.00
4309	5	$1\frac{1}{2}$ "	5	8.50
4310	6	2	6	10.00

No.	Rows.	Diam. of Block.	Diam. of Brush.	Dozen.
4507	5	$1\frac{1}{4}$ "	$3\frac{1}{2}$ "	\$ 7.00
4508	5	$1\frac{1}{4}$ "	$3\frac{3}{4}$ "	7.50
4509	5	$1\frac{1}{2}$ "	$4\frac{1}{2}$ "	9.00
4510	5	$1\frac{1}{2}$ "	$4\frac{3}{4}$ "	9.50
4511	5	$1\frac{1}{2}$ "	5	10.00
4512	6	2	6	12.00

SHORT HUB CLOSED FLAT
TOP WIRE DRAWN.

OPEN WIRE DRAWN.



Sizes and Prices Below.

Sizes and Prices Below.

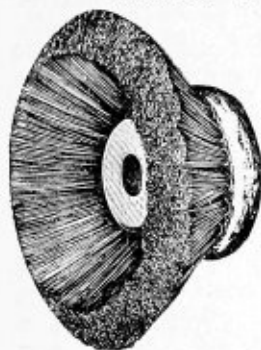
Short Hub.	Diam. of Brush.	Size of Block.
4550	$1\frac{3}{4}$ inches	$\frac{3}{4}$ inch
4551	$1\frac{7}{8}$ inches	$\frac{3}{4}$ inch
4552	2 inches	$\frac{3}{4}$ inch
4553	$2\frac{1}{2}$ inches	1 inch
4554	3 inches	1 inch
4555	$3\frac{1}{2}$ inches	$1\frac{1}{4}$ inches
4556	4 inches	$1\frac{1}{2}$ inches
4557	$4\frac{1}{2}$ inches	$1\frac{1}{2}$ inches
4558	5 inches	2 inches
4559	$5\frac{1}{2}$ inches	$2\frac{1}{2}$ inches
4560	6 inches	$2\frac{1}{2}$ inches

Length of Bristles.	No. of Rows.	Price, per Doz.	Open Brush.
$\frac{1}{2}$ inch cut	6	\$5.90	4575
9-16 inch cut	6	5.90	4576
$\frac{5}{8}$ inch cut	6	5.90	4577
$\frac{3}{4}$ inch cut	6	6.20	4578
1 inch cut	7	6.50	4579
$1\frac{1}{8}$ inch cut	7	8.00	4580
$1\frac{1}{4}$ inch cut	7	10.80	4581
$1\frac{1}{2}$ inch cut	7	14.00	4582
$1\frac{1}{2}$ inch cut	8	18.00	4583
$1\frac{1}{2}$ inch cut	8	19.00	4584
$1\frac{3}{4}$ inch cut	8	20.00	4585

BRISTLE "LATHE" BRUSHES.

For "Silversmiths'" Use.

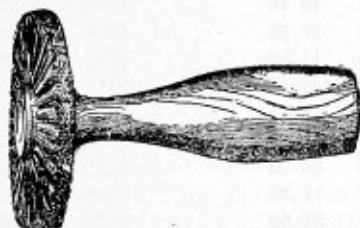
MADE OF "GREY RUSSIA BRISTLE" OF EXTRA QUALITY.



"CUP SHAPE"

SHORT HUB

Diameter of Brush.....	3 1/4"
Diameter of Block.....	1 1/2"
Number of Rows.....	4
Number of Brush.....	3570
Price per Dozen.....	\$3.50



"INSIDE" WHEEL BRUSH.

Diameter of Brush.	Diameter of Block.	Number of Rows.	Number of Brush.	Per Dozen.
2 1/8"	3/4"	2	3703	\$1.60
2 5/8"	3/4"	4	3704	3.25
2 3/4"	1"	3	3705	3.00
2 3/4"	3/4"	5	3706	4.00
3 1/2"	1 1/8"	4	3707	5.00
3 3/4"	1 1/4"	3	3708	3.75
5"	1 1/4"	3	3709	5.50
5"	1 1/4"	4	3710	7.50

OLD STYLE "END BRUSH." HUB ABOUT 5 INCHES LONG.



Diameter of Brush.	Length of Bristle.	Number of Brush.	Per Dozen.
1"	1 1/4"	3905	\$2.10
1"	2"	3906	3.00
1 1/4"	1 1/4"	3907	3.50
1 1/4"	1 1/2"	3908	4.00

NEW STYLE "END BRUSH." HUB ABOUT 5 INCHES LONG.



Diameter of Brush.	Length of Bristle.	Number of Brush.	Per Dozen.
3/8"	3/4"	4107	\$1.00
1/2"	7/8"	4108	1.25
5/8"	1"	4109	1.50
3/4"	1 1/8"	4110	2.00
1"	1 1/4"	4111	2.50
1"	1 1/2"	4112	3.60

Note—Order Brushes by their respective numbers and avoid errors.

GREY "MIXED" BRISTLE WHEEL BRUSHES.

These Are All Stiff Brushes—Made in the Upright Style. They Are Used By All
Classes of Trades.

Diameter of Brush.	Diameter of Block.	Number of Rows.	EXTRA No. of Brush.	QUALITY. Per Dozen.	SECOND QUALITY. No. of Brush.	Per Dozen.
3½"	2"	2	5101	\$3.00	5303	\$2.10
3½"	2"	3	5102	4.50	5304	3.15
3½"	2"	4	5103	5.25	5305	3.75
4"	2"	4	5104	6.00	5306	4.25
4"	2"	5	5105	7.00	5307	5.00
4"	2½"	2	5106	4.00	5308	2.80
4"	2½"	3	5107	5.40	5309	3.80
5"	2½"	4	5108	7.50	5310	4.75
5"	3"	2	5109	5.25	5311	3.40
5"	3"	3	5110	7.50	5312	4.75
5"	3"	4	5111	9.25	5313	5.75
6"	3"	4	5112	10.75	5314	6.75
6"	3"	5	5113	13.50	5315	8.50
6"	3"	6	5114	13.25	5316	8.25
6"	4"	4	5115	11.50	5317	7.25
7"	4"	4	5116	12.75	5318	8.00
7"	4"	6	5117	16.75	5319	10.50
8"	4"	6	5118	21.00	5320	12.50
8"	5"	4	5119	14.00	5321	8.75
8"	5"	5	5120	16.00	5322	10.00
8"	5"	6	5121	21.00	5323	13.00
8"	5"	8	5122	27.00	5324	17.00
8"	6"	4	5123	14.50	5325	9.00
9"	6"	4	5124	18.50	5326	11.50
9"	6"	6	5125	27.00	5327	17.00
9"	6"	8	5126	30.00	5328	19.00
10"	6"	4	5127	23.75	5329	14.00
10"	6"	6	5128	32.00	5330	18.75
10"	6"	8	5129	36.00	5331	21.00
10"	6½"	5	5130	23.75	5332	14.00
10"	8"	4	5131	21.00	5333	13.00
10"	8"	5	5132	25.00	5334	15.75
10"	8"	6	5133	30.00	5335	18.75
12"	8"	4	5134	29.00	5336	17.00
12"	8"	5	5135	30.00	5337	18.00
12"	8"	6	5136	36.00	5338	21.75
12"	8"	8	5137	51.00	5339	30.00
12"	9"	4	5138	32.00	5340	19.00
14"	10"	6	5139	50.00	5341	30.00

Note—We Supply These Brushes in the Converging Style on Special Order Only. Prices same as above.

GREY "RUSSIA" BRISTLE WHEEL BRUSHES.

Specially Made for Platers' and Silversmiths' Use.

THESE ARE ALL STIFF BRUSHES			EXTRA QUALITY		SECOND QUALITY	
Diameter of Brush.	Diameter of Block.	Number of Rows.	No. of Brush.	Per Dozen.	No. of Brush.	Per Dozen.
2 1/4"	1"	1	4705	\$1.00	4903	\$.90
2 1/4"	1"	2	4706	1.35	4904	1.25
2 1/4"	1"	3	4707	2.20	4905	1.85
2 1/4"	1"	4	4708	3.00	4906	2.50
2 1/2"	1"	3	4709	2.35	4907	1.95
2 3/4"	1"	2	4710	1.75	4908	1.50
2 3/4"	1 1/4"	2	4711	2.00	4909	1.65
3"	1 1/4"	4	4712	3.50	4910	3.00
3"	1 1/4"	1	4713	1.50	4911	1.35
3"	1 1/4"	3	4714	2.80	4912	2.40
3"	1 1/4"	4	4715	4.00	4913	3.25
3"	1 1/2"	2	4716	2.50	4914	2.25
3 1/8"	1 1/4"	4	4717	4.25	4915	3.50
3 1/4"	1 1/4"	2	4718	2.25	4916	1.75
3 1/4"	1 1/4"	5	4719	5.50	4917	4.80
3 1/2"	1 1/2"	1	4720	2.00	4918	1.75
3 1/2"	1 1/2"	2	4721	3.10	4919	2.75
3 1/2"	1 1/2"	3	4722	3.40	4920	3.00
3 1/2"	1 1/2"	4	4723	4.50	4921	3.75
3 3/4"	1 1/2"	3	4724	3.60	4922	3.25
3 3/4"	2"	2	4725	3.00	4923	2.50
4"	1 3/4"	5	4726	7.50	4924	6.80
4"	2"	3	4727	4.00	4925	3.20
4"	2"	6	4728	10.50	4926	9.50
4 1/4"	1 3/4"	3	4729	4.25	4927	3.70
4 1/4"	1 3/4"	4	4730	5.30	4928	4.50
4 3/8"	1 7/8"	2	4731	4.00	4929	3.50
4 1/2"	2"	1	4732	2.50	4930	2.25
4 1/2"	2"	2	4733	3.50	4931	2.75
4 1/2"	2"	4	4734	5.50	4932	4.75
4 1/2"	2 1/4"	6	4735	12.00	4933	10.75
4 1/4"	2 1/2"	4	4736	7.60	4934	6.75
4 3/4"	2 1/4"	2	4737	4.90	4935	4.25
4 3/4"	2 1/4"	5	4738	9.75	4936	8.50
5"	2"	3	4739	5.00	4937	4.25
5"	2"	4	4740	6.50	4938	5.20
5"	2"	5	4741	8.25	4939	7.50
5 1/4"	2"	2	4742	4.00	4940	3.25
5 1/4"	2 1/4"	3	4743	7.50	4941	6.75
5 1/2"	2 1/4"	5	4744	10.50	4942	9.25
5 1/2"	2 1/2"	4	4745	8.00	4943	7.20
5 5/8"	2 5/8"	7	4746	17.00	4944	11.00
4 3/4"	2 1/2"	5	4747	11.50	4945	10.25
5 3/4"	2 1/2"	6	4748	15.00	4946	13.50
6 3/8"	2 5/8"	7	4749	18.00	4947	12.00

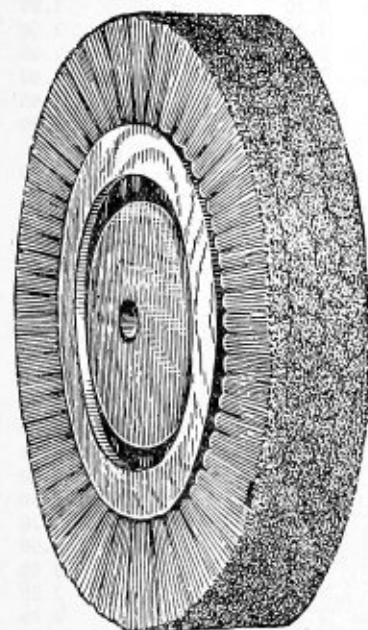
Note—Converging Style Always Sent Unless Upright Style is Specified.

"TAMPICO" WHEEL BRUSHES.

Specially Adapted for Large, Quick, Rough Work. Used by Brass Goods Manufacturers, Nickel Platers and Stove Manufacturers.

ALL STIFF BRUSHES OF EXTRA QUALITY.

Diameter of Brush.	Diameter of Block.	Number of Rows.	Number of Brush.	Per Dozen.
5"	3"	4	5501	\$2.90
6"	3"	4	5502	3.10
6"	3"	6	5503	4.10
6"	4"	4	5504	3.40
6"	4"	5	5505	4.00
7"	4"	4	5506	3.60
7"	4"	5	5507	4.25
7"	4"	6	5508	5.00
7"	5"	6	5509	5.50
8"	4"	4	5510	3.90
8"	4"	5	5511	4.50
8"	4"	6	5512	5.25
8"	5"	4	5513	4.35
8"	5"	5	5514	4.90
8"	5"	6	5515	6.00
8"	5"	8	5516	9.00
8"	6"	4	5517	4.75
8"	6"	5	5518	6.40
8"	6"	6	5519	6.90
9"	5"	4	5520	4.80
9"	5"	6	5521	6.50
9"	6"	4	5522	4.85
9"	6"	5	5523	6.75
9"	6"	6	5524	7.20
10"	5"	6	5525	7.00
10"	6"	4	5526	4.00
10"	6"	6	5527	7.40
10"	6"	8	5528	11.00
10"	6 1/2"	5	5529	7.25
10"	7 1/2"	6	5530	10.50
12"	6"	6	5531	10.00
12"	8"	6	5532	12.00
12"	8"	8	5533	15.00
12"	9"	5	5534	12.00
12"	9"	6	5535	14.00
14"	8"	6	5536	14.00
14"	10"	6	5537	15.00
14"	10"	8	5538	20.00
16"	12"	6	5539	18.00
16"	12"	8	5540	24.00
18"	12"	6	5541	20.00



This illustration represents an Upright Shape Brush, which we always send unless Converging Shape is specified.

Special Brushes of Converging Shape for Silversmiths' use made of Fine "Selected Tampico" carried in stock. Sizes at bottom of list-numbers.

Silversmiths Brushes	8"	2 3/4"	8	....	6.00
	8"	3"	6	....	5.00

TAMPICO "WASHOUT" BRUSHES.

Made of Extra Quality of White Tampico.



Known as Curved Handle.

Extreme length, 13". Length of Brush, 5½". Length of cut, ⅞".

Number of Brush.....	5704	5705	5706	5707	5708
Number of Rows.....	2	3	4	5	6
Price per dozen.....	\$0.75	\$0.90	\$1.10	\$1.35	\$1.60



Known as Straight Handle.

Extreme length, 13". Length of Brush, 5½". Length of cut, ⅞".

Number of Brush.....	5902	5903	5904	5905	5906
Number of Rows.....	2	3	4	5	6
Price per dozen.....	\$0.65	\$0.80	\$1.00	\$1.25	\$1.50



Known as Shoe Handle.

Extreme length, 11". Length of Brush, 5½". Length of cut, ⅞".

Number of Brush.....	6308	6309	6310	6311	6312
Number of Rows.....	2	3	4	5	6
Price per dozen.....	\$0.80	\$1.20	\$1.50	\$1.90	\$2.20

Note—All handles are made of selected wood of First Quality, thoroughly cured.

Workmanship positively The Best and Uniform.

BRISTLE "WASHOUT" BRUSHES.



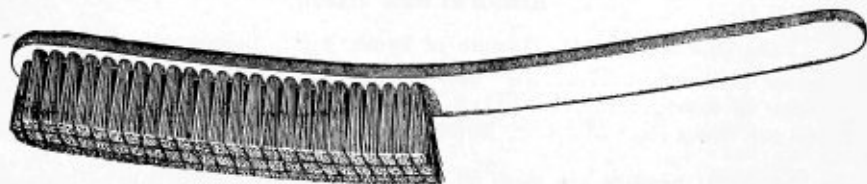
This illustration represents a "Curved Handle Brush."



This illustration represents a "Straight Handle Brush."

The measurements of above brushes are, viz: Extreme length, 13". Length of brush, $5\frac{1}{2}$ ". Length of cut, $\frac{7}{8}$ ".

	No of Rows.	EXTRA QUALITY OF GREY RUSSIA BRISTLE.		SECOND QUALITY OF GREY RUSSIA BRISTLE.		THIRD QUALITY OF GREY RUSSIA BRISTLE.		SECOND QUALITY OF BLACK CHINA BRISTLE.	
		No. of Brush.	Per Dozen.	No. of Brush.	Per Dozen.	No. of Brush.	Per Dozen.	No. of Brush.	Per Dozen.
Curved "Wood" Handle Brushes.	1	6501	\$1.70	6525	\$1.15	6550	\$1.00	6575	\$1.10
	2	6502	2.30	6526	1.80	6551	1.40	6576	1.60
	3	6503	2.75	6527	2.30	6552	1.80	6577	2.10
	4	6504	3.40	6528	3.00	6553	2.20	6578	2.60
	5	6505	4.40	6529	3.55	6554	2.70	6579	3.20
	6	6506	5.20	6530	4.10	6555	3.20	6580	3.65
Straight "Wood" Handle Brushes.	1	6705	1.50	6730	1.00	6761	.90	6785	.95
	2	6706	2.25	6731	1.65	6762	1.25	6786	1.45
	3	6707	2.75	6732	2.25	6763	1.65	6787	1.95
	4	6708	3.40	6733	2.75	6764	2.05	6788	2.40
	5	6709	4.25	6734	3.40	6765	2.55	6789	3.10
	6	6710	4.75	6735	3.75	6766	3.00	....	3.40
"Bone" Handle Brushes.	1	6904	1.70	6940	1.50	6975	1.10	6994	1.35
	2	6905	2.35	6941	2.00	6976	1.60	6995	1.80
	3	6906	3.00	6942	2.50	6977	2.10	6996	2.25
	4	6907	3.50	6943	3.00	6978	2.80	6997	2.70
	5	6908	4.00	6944	3.50	6979	3.25	6998	3.15
	6	6909	4.50	6945	4.00	6980	3.75	6999	3.60



This illustration represents a "Bone" Handle Brush.
 Extreme length, $7\frac{1}{2}$ ". Length of brush, $3\frac{3}{4}$ ". Length of cut, $\frac{3}{4}$ ".

BRISTLE "WASHOUT" BRUSHES.



This illustration represents a "Shoe" Handle Brush.

The measurements of above brushes are, viz: Extreme length, 11".

Length of brush, 5". Length of cut, $\frac{7}{8}$ ".

	No. of Rows.	EXTRA QUALITY OF GREY RUSSIA BRISTLE		SECOND QUALITY OF GREY RUSSIA BRISTLE		SECOND QUALITY OF BLACK CHINA BRISTLE.	
		No. of Brush.	Per Dozen.	No. of Brush.	Per Dozen.	No. of Brush.	Per Dozen.
Shoe Handle.	1	7303	\$1.70	7325	\$1.15	7350	\$1.00
	2	7304	2.30	7326	1.70	7351	1.45
	3	7305	3.25	7327	2.25	7352	2.00
	4	7306	3.75	7328	2.80	7353	2.25
	5	7307	4.25	7329	3.50	7354	3.00
	6	7308	5.00	7330	4.00	7355	3.50
Turned Wood Handle.	1	7510	1.35	7540	1.10	7562	1.00
	2	7511	2.25	7541	2.00	7563	1.90
	3	7512	2.75	7542	2.50	7564	2.35
	4	7513	3.50	7543	3.00	7565	2.90
	5	7514	4.00	7544	3.50	7566	3.25
	6	7515	4.50	7546	4.00	7567	3.90

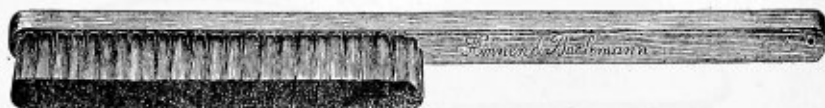


This illustration represents a "Turned" Handle Brush.

Extreme length, $9\frac{1}{2}$ ". Length of brush, $4\frac{1}{2}$ ". Length of cut, $\frac{7}{8}$ ".

WATCH AND CLOCK BRUSHES.

Always State Grade and Number.



Hinnen Watch.	Nos.	7701	7702	7703	7704	7705
	Rows,	2	3	4	5	6
	Per Doz.	\$1.60	\$2.10	\$2.60	\$3.20	\$3.90

Total length of all sizes, $9\frac{1}{2}$ ". Length of brush part, $4\frac{1}{2}$ ".

Five grades, viz: Extra Hard, Hard, Half Hard, Half Soft, Soft.



Superieur Watch.	Nos.	7913	7914	7915	7916	7917
	Rows,	2	3	4	5	6
	Per Doz.	\$1.60	\$2.10	\$2.60	\$3.20	\$3.90

Total length of all sizes, $9\frac{1}{2}$ ". Length of brush part, $4\frac{1}{2}$ ".

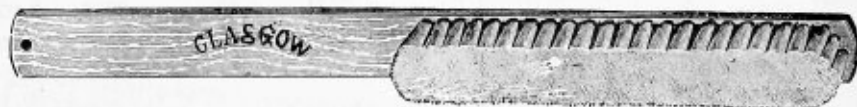
Three grades, Hard, Medium, Soft.



Glasgow Watch.	Nos.	8107	8108	8109	8110	8111
	Rows,	2	3	4	5	6
	Per Doz.	\$1.60	\$1.95	\$2.10	\$2.45	\$2.80

Total length of all sizes, $10\frac{1}{4}$ ". Length of brush part, 5".

Five grades, viz: Extra Hard, Hard, Half Hard, Half Soft, Soft.



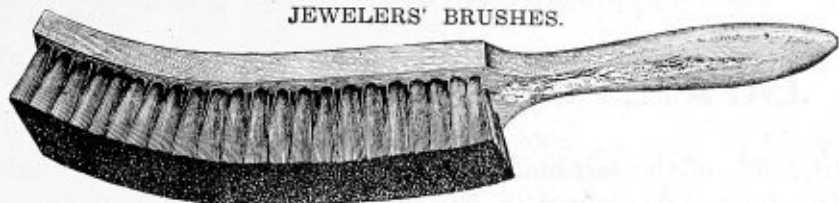
Glasgow Clock.	Nos.	8310	8311	8312
	Rows,	3	4	5
	Per Doz.	\$2.00	\$2.25	\$2.60

Total length of all sizes, $11\frac{1}{4}$ ". Length of brush part, $5\frac{1}{2}$ ".

Two grades, Hard, Black; and Medium White.

Note—Always order brushes by their respective number and avoid error.

JEWELERS' BRUSHES.



Wood Handle Plate Brush.

This brush is used for Polishing and Cleaning Plated and Hollow Ware. These brushes are made of a Special Grade of Fine White Mane Hair.

Nos.	8521	8522	8523	8524	8525
Rows,	2	3	4	5	6
Per Doz.	\$3.30	\$4.00	\$5.00	\$6.00	\$7.50



Wood Handle Bench Brush.

	No.	Length of Brush	Total Length	Length of Stock	Dozen
Extra quality medium stiff Black	8703	3 1/4"	8 1/2"	1 3/8"	\$1.25
Mane Hair used in these	8704	3 1/2"	9 1/2"	1 3/8"	\$1.50
Brushes.	8705	5"	11"	1 5/8"	2.00

All sizes made with (4) four rows only.



	Nos.	8910	8911	8912	8913
Bone Handle Brush.	Rows.	3	4	5	6
Made only of Medium Mane Hair.	Per Doz.	\$1.75	\$2.15	\$2.55	\$3.20



	No.	Rows	Length of Brush Part	Total Length	Length of Stock	Dozen
Wood Handle Sawdust Brush	9115	5	4"	8 1/2"	1 1/4"	\$2.50

Bone Handle Sawdust Brush.



	No.	Rows	Length of Brush Part	Total Length	Stock	Dozen
White Mane Hair, Extra Quality.	9325	4	2 3/4"	6"	1 1/4"	\$3.00

LAFAYETTE BENCH BRUSHES

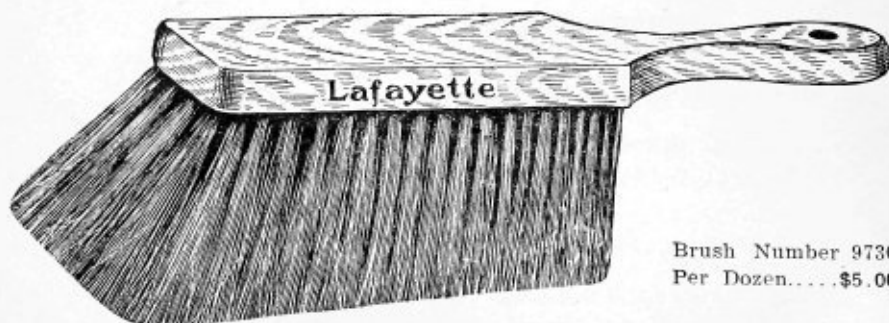
Are made of the *best* materials and best workmanship throughout. Try a dozen—then if you are not fully satisfied that they are the best for the money and purpose return what is left and get your money back.

SUCH IS OUR GUARANTEE



Brush Number 9550
Per Dozen \$4.00

Length of Brush 6". Bristle, 2". Total length, 10½".

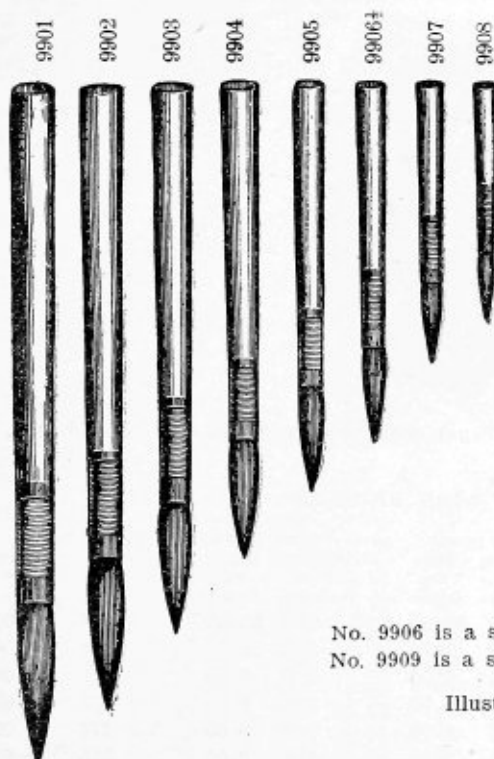


Brush Number 9730
Per Dozen.....\$5.00

Length of Brush, 8". Bristle, 3". Total length, 13".

BORAX BRUSHES.

Best Quality of Camel's Hair.



No's	Gross	Dozen
9901	\$3 00	\$0 30
9902	2 50	25
9903	2 25	23
9904	2 10	21
9905	1 50	15
9906	1 30	13
9906½	1 25	12
9907	1 20	12
9908	1 15	12
9909	1 10	12

No. 9906 is a size between Nos. 9905 and 9906½.
 No. 9909 is a size smaller than No. 9908.

Illustrations are exact sizes.



DIAL DUSTING BRUSH.

No. 9952 Small size, per doz., \$1 65

Made of the Finest Camel's Hair.

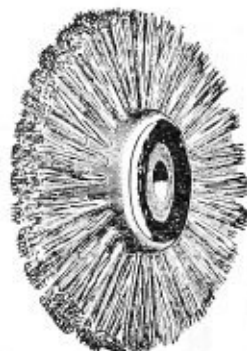
No. 9953 Large size, per doz., 2 15

Order by respective number in every case and always affix page number to every item. You will find this feature of great value when you check your bill.

SCRATCH BRUSHES.

Made of the Best Quality of Wire.

Order by respective Brush number and avoid error.



This illustration represents a Brush commonly known as a "Scratch Brush."

STEEL WIRE BRUSHES.

Diameter of Brushes.	ONE ROW.		TWO ROWS.		THREE ROWS.		FOUR ROWS.	
	Number of Brush.	Price Per Dozen.	Number of Brush.	Price Per Dozen.	Number of Brush.	Price Per Dozen.	Number of Brush.	Price Per Dozen.
2"	200	\$2.00	223	\$3.50	245	\$4.50	270	\$6.00
2 1/2"	201	2.50	224	3.75	246	5.00	271	7.00
3 3/4"	202	2.75	225	4.00	247	6.00	272	8.00
3"	203	3.00	226	4.50	248	6.50	273	9.00
3 1/4"	204	4.00	227	6.00	249	8.00	274	11.00
3 1/2"	205	5.00	228	7.00	250	9.00	275	14.00
4"	206	6.00	229	9.00	251	12.00	276	18.00

BRASS WIRE BRUSHES.

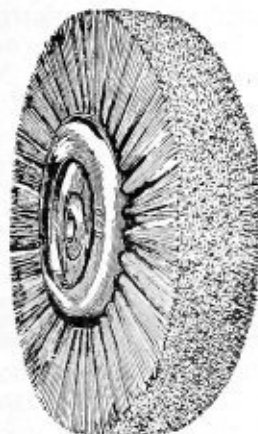
Diameter of Brushes.	ONE ROW.		TWO ROWS.		THREE ROWS.		FOUR ROWS.	
	Number of Brush.	Price Per Dozen.	Number of Brush.	Price Per Dozen.	Number of Brush.	Price Per Dozen.	Number of Brush.	Price Per Dozen.
2"	401	\$2.00	415	\$3.50	433	\$4.50	455	\$6.00
2 1/2"	402	2.50	416	3.75	434	5.00	456	7.00
2 3/4"	403	2.75	417	4.00	435	6.00	457	8.00
3"	404	3.00	418	4.50	436	6.50	458	9.00
3 1/4"	405	4.00	419	6.00	437	8.00	459	11.00
3 1/2"	406	5.00	420	7.00	438	9.00	460	14.00
4"	407	6.00	421	9.00	439	12.00	461	18.00

SCRATCH BRUSHES.

Made of the Best Quality of wire.

Order by respective Brush number and avoid error.

This illustration represents the heavier and larger sizes of Scratch Wheel Brushes.



STEEL WIRE BRUSHES.

Diameter of Brushes.	ONE ROW		TWO ROWS		THREE ROWS		FOUR ROWS		FIVE ROWS	
	Number of Brush.	Price Per Dozen.	Number of Brush.	Price Per Dozen.	Number of Brush.	Price Per Dozen.	Number of Brush.	Price Per Dozen.	Number of Brush.	Price Per Dozen.
4 1/4"	605	\$6.50	625	\$10.50	631	\$13.50	643	\$18.50	657	\$24.00
4 1/2"	606	7.00	626	11.50	632	14.50	644	20.50	658	27.00
4 3/4"	607	7.50	627	12.00	633	15.00	645	22.00	659	29.00
5"	608	8.00	628	13.00	634	16.50	646	24.00	660	32.00
5 1/2"	609	9.00	629	15.00	635	18.50	647	27.00	661	36.00
6"	610	10.50	630	16.50	636	21.50	648	30.00	662	39.00
6 1/2"	611	11.00	631	19.00	637	24.00	649	36.00	663	42.00
7"	612	12.00	632	21.00	638	27.00	650	40.00	664	48.00
7 1/2"	613	13.00	633	24.00	639	30.00	651	44.00	665	54.00
8"	614	14.00	634	25.00	640	33.00	652	48.00	666	60.00

BRASS WIRE BRUSHES.

Diameter of Brushes.	ONE ROW		TWO ROWS		THREE ROWS		FOUR ROWS		FIVE ROWS	
	Number of Brush.	Price Per Dozen.	Number of Brush.	Price Per Dozen.	Number of Brush.	Price Per Dozen.	Number of Brush.	Price Per Dozen.	Number of Brush.	Price Per Dozen.
4 1/4"	810	\$6.50	821	\$10.50	843	\$13.50	860	\$18.50	883	\$24.00
4 1/2"	811	7.00	822	11.50	844	14.50	861	20.50	884	27.00
4 3/4"	812	7.50	823	12.00	845	15.00	862	22.00	885	29.00
5"	813	8.00	824	13.00	846	16.50	863	24.00	886	32.00
5 1/2"	814	9.00	825	15.00	847	18.50	864	27.00	887	36.00
6"	815	10.50	826	16.50	848	21.50	865	30.00	888	39.00
6 1/2"	816	11.00	827	19.00	849	24.00	866	36.00	889	42.00
7"	817	12.00	828	21.00	850	27.00	867	40.00	890	48.00
7 1/2"	818	13.00	829	24.00	851	30.00	868	44.00	891	54.00
8"	819	14.00	830	25.00	852	33.00	869	48.00	892	60.00

FINE WIRE HAND SCRATCH BRUSHES.

STRAIGHT
HANDLE.

STEEL "WIRE" BRUSHES.

Number of Brush.....	8400	8401	8402	8403
Number of Rows.....	2	3	4	5
Price per Dozen.....	\$4.00	\$5.00	\$6.00	\$7.00

BRASS "WIRE" BRUSHES.

Number of Brush.....	8450	8451	8452	8453
Number of Rows.....	2	3	4	5
Price per Dozen.....	\$4.00	\$5.00	\$6.00	\$7.00

CURVED
HANDLE.

STEEL "WIRE" BRUSHES.

Number of Brush.....	8600	8601	8602	8603
Number of Rows.....	2	3	4	5
Price per Dozen.....	\$4.00	\$5.00	\$6.00	\$7.00

BRASS "WIRE" BRUSHES.

Number of Brush.....	8650	8651	8652	8653
Number of Rows.....	2	3	4	5
Price per Dozen.....	\$4.00	\$5.00	\$6.00	\$7.00

All the above brushes are $5\frac{1}{2}$ inches long. Extreme length of wood block, 12 inches.

SHOE
HANDLE.

Length of Brush About 5 Inches. Total Length, 11 inches.

Steel Number	8000	8001	8002	8003	8004
Brass Number	8050	8051	8052	8053	8054
Number of Rows.....	2	3	4	5	6
Price per Dozen.....	\$3.50	\$5.00	\$6.00	\$7.00	\$9.00

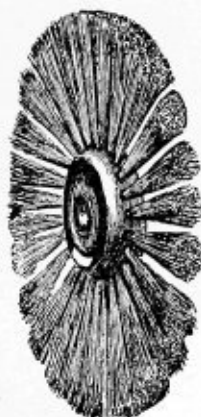
TURNED
HANDLE.

Length of Brush $4\frac{1}{2}$ inches. Total Length, 9 inches.

Steel Number	8200	8201	8202	8203
Brass Number	8250	8251	8252	8253
Number of Rows.....	2	3	4	5
Price per Dozen.....	\$4.00	\$5.00	\$6.00	\$7.00

SATIN FINISHING BRUSHES.

Made of the Best Quality of Wire. Order by respective Brush Number and avoid error.



This illustration represents a Brush that is made of medium fine wire. This character of Brush is made to produce both frosting and satin finishes—on gold-plated ware, also silver.

STEEL WIRE BRUSHES.

Diameter of Brushes.	ONE ROW		TWO ROWS		THREE ROWS		FOUR ROWS	
	Number of Brush.	Price per Dozen.	Number of Brush.	Price per Dozen.	Number of Brush.	Price per Dozen.	Number of Brush.	Price per Dozen.
3"	1000	\$ 3.00	1032	\$ 4.50	1045	\$ 6.50	1061	\$ 9.00
3 1/2"	1001	4.00	1033	6.00	1046	8.50	1062	12.00
4"	1002	5.50	1034	8.00	1047	10.50	1063	15.00
5"	1003	7.00	1035	10.00	1048	13.50	1064	18.00
6"	1004	9.00	1036	12.00	1049	16.50	1065	21.00
7"	1005	11.00	1037	14.50	1050	19.50	1066	24.00
8"	1006	13.50	1038	18.00	1051	22.50	1067	27.00

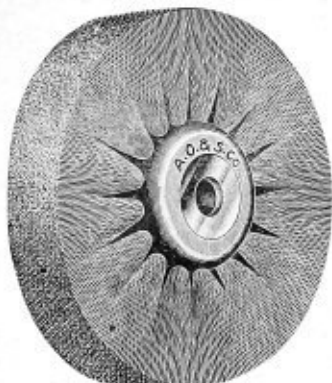
BRASS WIRE BRUSHES.

Diameter of Brushes.	ONE ROW		TWO ROWS		THREE ROWS		FOUR ROWS	
	Number of Brush.	Price per Dozen.	Number of Brush.	Price per Dozen.	Number of Brush.	Price per Dozen.	Number of Brush.	Price per Dozen.
3"	1207	\$ 3.00	1221	\$ 4.50	1233	\$ 6.50	1255	\$ 9.00
3 1/2"	1208	4.00	1222	6.00	1234	8.50	1256	12.00
4"	1209	5.50	1223	8.00	1235	10.50	1257	15.00
5"	1210	7.00	1224	10.00	1236	13.50	1258	18.00
6"	1211	9.00	1225	12.00	1237	16.50	1259	21.00
7"	1212	11.00	1226	14.50	1238	19.50	1260	24.00
8"	1213	13.50	1227	18.00	1239	22.50	1261	27.00

Note—If you need a Brush to produce a certain kind of work, why not give us the facts and let us make a Brush to meet your requirements? Try us.

CRIMPED WIRE MATTING "WHEEL" BRUSH.

Made of the Best Quality of Wire. Order by respective Brush number and avoid error.



This illustration represents a Brush made of "Crimped Wire." This character of Brush will produce a **high finish** on silverware and similar metals.

Especially adapted for aluminum work.

STEEL WIRE BRUSHES.

Diameter of Brushes	ONE ROW.		TWO ROWS.		THREE ROWS.		FOUR ROWS.	
	Number of Brush.	Price Per Dozen.	Number of Brush.	Price Per Dozen.	Number of Brush.	Price Per Dozen.	Number of Brush.	Price Per Dozen.
2"	1805	\$2.00	1820	\$ 3.50	1831	\$ 4.50	1843	\$ 6.00
2½"	1806	2.50	1821	3.75	1832	5.00	1844	7.00
3"	1807	3.00	1822	4.50	1833	6.50	1845	9.00
3½"	1808	5.00	1823	7.00	1834	9.00	1846	14.00
4"	1809	6.00	1824	9.00	1835	12.00	1847	18.00
4½"	1810	7.00	1825	11.00	1836	15.00	1848	22.00
5"	1811	8.00	1826	13.00	1837	18.00	1849	26.00

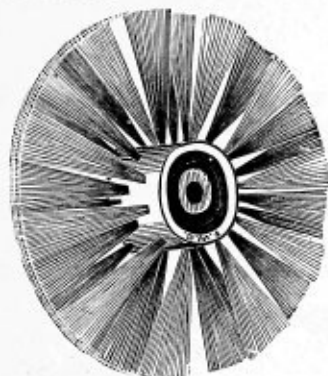
BRASS WIRE BRUSHES.

Diameter of Brushes	ONE ROW.		TWO ROWS.		THREE ROWS.		FOUR ROWS.	
	Number of Brush.	Price Per Dozen.	Number of Brush.	Price Per Dozen.	Number of Brush.	Price Per Dozen.	Number of Brush.	Price Per Dozen.
2"	2002	\$2.00	2025	\$ 3.50	2041	\$ 4.50	2055	\$ 6.00
2½"	2003	2.50	2026	3.75	2042	5.00	2056	7.00
3"	2004	3.00	2027	4.50	2043	6.50	2057	9.00
3½"	2005	5.00	2028	7.00	2044	9.00	2058	14.00
4"	2006	6.00	2029	9.00	2045	12.00	2059	18.00
4½"	2007	7.00	2030	11.00	2046	15.00	2060	22.00
5"	2008	8.00	2031	13.00	2047	18.00	2061	26.00

Note—Intrust your Brush orders to us and you will **Be Sure** to get the **Same Kind Every Time.**

MATTING "WHEEL" BRUSHES.

Made of the Best Quality of Wire. Order by respective Brush number and avoid error.



This illustration represents a Fine Wire Matting Brush, its construction admits of producing a dull finish, on silverware, of all kinds.

STEEL WIRE BRUSHES.

Diameter of Brushes	ONE ROW		TWO ROWS		THREE ROWS		FOUR ROWS	
	Number of Brush	Price per Dozen	Number of Brush	Price per Dozen	Number of Brush	Price per Dozen	Number of Brush	Price per Dozen
2"	1403	\$2.00	1425	\$3.50	1430	\$ 4.50	1441	\$ 6.00
2½"	1404	2.50	1426	3.75	1431	5.00	1442	7.00
3"	1405	3.00	1427	4.50	1432	6.50	1443	9.00
3½"	1406	5.00	1428	7.00	1433	9.00	1444	14.00
4"	1407	6.00	1429	9.00	1434	12.00	1445	18.00

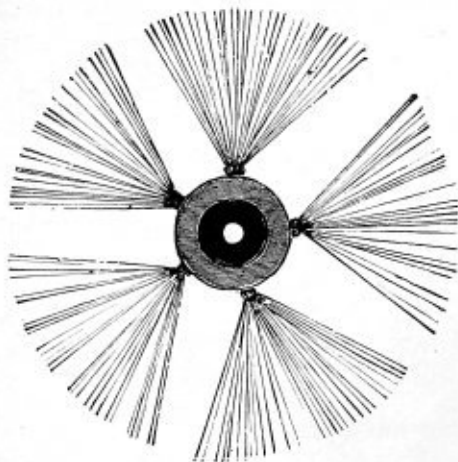
BRASS WIRE BRUSHES.

Diameter of Brushes	ONE ROW		TWO ROWS		THREE ROWS		FOUR ROWS	
	Number of Brush	Price per Dozen	Number of Brush	Price per Dozen	Number of Brush	Price per Dozen	Number of Brush	Price per Dozen
2"	1605	\$2.00	1620	\$3.50	1635	\$ 4.50	1650	\$ 6.00
2½"	1606	2.50	1621	3.75	1636	5.00	1651	7.00
3"	1607	3.00	1622	4.50	1637	6.50	1652	9.00
3½"	1608	5.00	1623	7.00	1638	9.00	1653	14.00
4"	1609	6.50	1624	9.00	1639	12.00	1654	18.00

Note—If you are using a Brush today that gives you perfect satisfaction send us the old worn out Brush and we will duplicate your future orders with the identical Brush. This insures you against the loss of valuable time, vexatious experiments and error.

FINE WIRE "OPEN" BRUSHES.

For Frosting and Satin Finish Work.



This illustration represents a Spider Swing Brush.

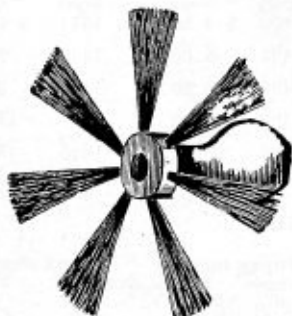
Diameter of Block.....1¼"

Diameter of Brush.....6½"

Number 2200 Number 2250

Steel Brush. Brass Brush.

\$9.00 Dozen. \$9.00 Dozen.

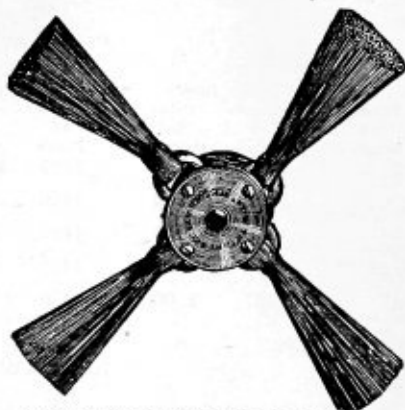


STAR MATT BRUSH

Diameter 2½".

Knots.	Steel Brush Number.	Brass Brush Number.	Either One Dozen.
5	2400	2605	\$4.50
6	2401	2606	5.25
7	2402	2607	6.00
8	2403	2608	6.75
10	2405	2609	7.50
12	2407	2610	9.00

Note—Always order by respective numbers and avoid errors.



A PATENT SWING BRUSH WITH STEEL HUB.

Diameter.	Steel Wire Number.	Brass Wire Number.
6¾"	2800	2850
8"	2801	2851

Price per Dozen, Steel or Brass Wire.

6¾"	\$15.00
8"	18.00

EXTRA KNOTS, STEEL OR BRASS.

\$9.00 Dozen.

Steel Number	Brass Number
3000	3050

FINE WIRE SWING BRUSHES.

"TIFFANY'S PATENT."

\$9.00 Dozen

Steel or Brass.

Diameter of Brush..... $6\frac{3}{4}$ "Diameter of Block..... $1\frac{1}{4}$ "

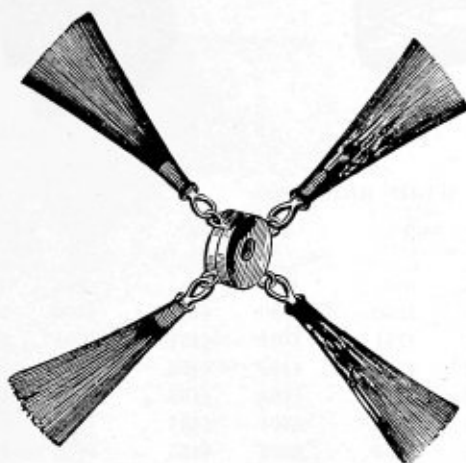
Steel Number	Brass Number
3200	3250

EXTRA KNOTS

Steel or Brass

\$6.00 Dozen Sets.

Steel Number	Brass Number
3400	3450



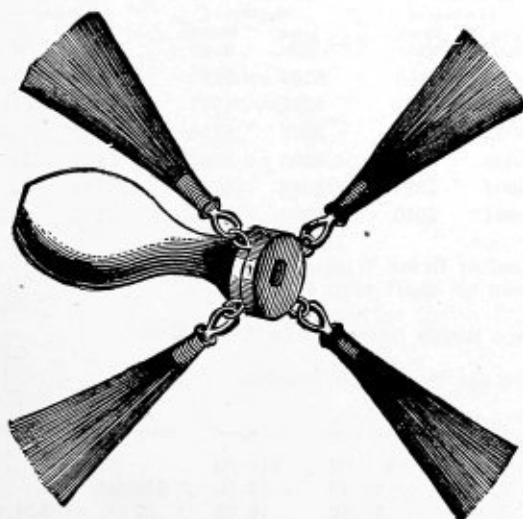
STAR.

Total Diameter $6\frac{1}{2}$ "Diameter of Block..... $1\frac{1}{4}$ "

Steel or Brass

\$9.00 Dozen.

Steel Number	Brass Number
3600	3650



EXTRA KNOTS

Steel or Brass

\$6.00 Dozen Sets.

Steel Number	Brass Number
3800	3850

Note—Always order by respective brush number and avoid error.

SILVERSMITH'S "WIRE" GOBLET BRUSHES.



Showing Long Hub.



Short Hub Brush.

STEEL WIRE BRUSHES.

Diameter of Brush.	FOUR ROWS. Numbers of		SIX ROWS. Numbers of		EIGHT ROWS. Numbers of		TEN ROWS. Numbers of	
	Long Hub.	Short Hub.	Long Hub.	Short Hub.	Long Hub.	Short Hub.	Long Hub.	Short Hub.
2"	4000	4050	4200	4250	4400	4450	4600	4651
2½"	4001	4051	4201	4251	4401	4451	4601	4652
3"	4002	4052	4202	4252	4402	4452	4602	4653
3½"	4003	4053	4203	4253	4403	4453	4603	4654
4"	4004	4054	4204	4254	4404	4454	4604	4655
5"	4005	4055	4205	4255	4405	4455	4605	4656

BRASS WIRE BRUSHES.

Diameter of Brush.	FOUR ROWS. Numbers of		SIX ROWS. Numbers of		EIGHT ROWS. Numbers of		TEN ROWS. Numbers of	
	Long Hub.	Short Hub.	Long Hub.	Short Hub.	Long Hub.	Short Hub.	Long Hub.	Short Hub.
2"	4800	4850	5000	5050	5200	5250	5400	5450
2½"	4801	4851	5001	5051	5201	5251	5401	5451
3"	4802	4852	5002	5052	5202	5252	5402	5452
3½"	4803	4853	5003	5053	5203	5253	5403	5453
4"	4804	4854	5004	5054	5204	5254	5404	5454
5"	4805	4855	5004	5055	5205	5255	5405	5455

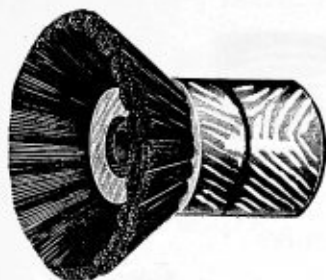
All Kinds { Steel or Brass Wire } Same Price
 { Long or Short Hub }

Order by Respective Brush Number and Avoid Error.

All Prices are Per Dozen Brushes.

PRICE LIST FOR ALL ABOVE BRUSHES.	{	Diameter.	Four Rows.	Six Rows.	Eight Rows.	Ten Rows
		2"	\$ 9.00	\$12.00		
		2½"	10.50	13.50	\$16.50	
		3"	12.50	16.00	20.00	\$24.00
		3½"	16.00	20.00	24.00	30.00
		4"	20.00	24.00	30.00	36.00
		5"	24.00	30.00	36.00	42.00

CUP SHAPE "WIRE" BRUSHES.



Brush With Long Hub.



Short Hub Brush.

STEEL WIRE BRUSHES.

Face Diameter of Brush	TWO ROWS		THREE ROWS		FOUR ROWS	
	Numbers of		Numbers of		Numbers of	
	Long Hub.	Short Hub.	Long Hub.	Short Hub.	Long Hub.	Short Hub.
1½"	5600	5650	5800	5850	6000	6050
2"	5601	5651	5801	5851	6001	6051
2½"	5602	5652	5802	5852	6002	6052
3"	5603	5653	5803	5853	6003	6053
4"	5604	5654	5804	5854	6004	6054

BRASS WIRE BRUSHES.

Face Diameter of Brush.	TWO ROWS		THREE ROWS		FOUR ROWS	
	Numbers of		Numbers of		Numbers of	
	Long Hub.	Short Hub.	Long Hub.	Short Hub.	Long Hub.	Short Hub.
1½"	6201	6250	6400	6450	6600	6650
2"	6202	6251	6401	6451	6601	6651
2½"	6203	6252	6402	6452	6602	6652
3"	6204	6253	6403	6453	6603	6653
4"	6205	6254	6404	6454	6604	6654

All Kinds { Steel or Brass Wire } Same Price
 { Long or Short Hub }

Order by respective brush number and avoid error.

All prices are Per Dozen Brushes.

PRICE LIST FOR ALL ABOVE BRUSHES	Diameter.			
	2 Rows.		3 Rows.	
	4 Rows.			
	1½"	\$ 5.00	\$ 7.50	\$10.00
	2"	6.00	9.00	12.00
	2½"	8.00	12.00	15.00
	3"	10.00	15.00	18.00
	4"	12.00	18.00	21.00

FINE "WIRE" BRUSHES.

For Jewelers and Silversmiths.



This illustration represents a Jeweler's End Brush.

Length of cut, all sizes about 1"

STEEL "WIRE" BRUSHES.

Number of Brush.....	6600	6610	6620
Diameter of Brush.....	$\frac{1}{2}$ "	$\frac{5}{8}$ "	$\frac{3}{4}$ "
Price per dozen	\$2.50	\$2.75	\$3.00

BRASS "WIRE" BRUSHES.

Number of Brush.....	6650	6660	6670
Diameter of Brush	$\frac{1}{2}$ "	$\frac{5}{8}$ "	$\frac{3}{4}$ "
Price per Dozen	\$2.50	\$2.75	\$3.00

SILVERSMITHS' AND PLATERS' END BRUSH.

Length of cut, all sizes, about $1\frac{1}{8}$ ".

STEEL "WIRE" BRUSHES.

Number of Brush	6800	6801	6802	6803	6804
Diameter of Brush	1"	$1\frac{1}{4}$ "	$1\frac{1}{2}$ "	$1\frac{3}{4}$ "	2"
Price per Dozen	\$4.50	\$5.25	\$6.00	\$6.25	\$7.50

BRASS "WIRE" BRUSH.

Number of Brush	6850	6851	6852	6853	6854
Diameter of Brush	1"	$1\frac{1}{4}$ "	$1\frac{1}{2}$ "	$1\frac{3}{4}$ "	2"
Price per Dozen	\$4.50	\$5.25	\$6.00	\$6.25	\$7.50



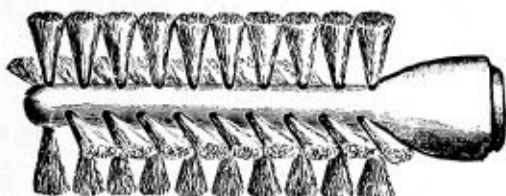
GLASS SCRATCH BRUSH.

Made of Fine Glass Strands—Bound with Cotton Cord.

Brush Number, 7000	Diameter, $\frac{1}{2}$ "	Length, 7"	Dozen, \$2.50
Brush Number, 7001	Diameter, $\frac{3}{4}$ "	Length, 7"	Dozen, 5.00
Brush Number, 7002	Diameter, 1"	Length, 7"	Dozen, 8.00

FINE "WIRE" BRUSHES.

This illustration represents a Ring Scratch Brush made of Fine Crimped Wire. Diameter, 1". Length, 4".



Steel Wire, Number.....	7200	Brass Wire, Number.....	7250
Price per Dozen.....	\$6.00	Price per Dozen.....	\$6.00

Note—We can furnish this same style of Brush in all diameters up to 2 inches—on special order—at same price.

Spiral Scratch Brush made of Fine Crimped Wire.

Diameter, 1". Length of Spiral, $3\frac{1}{2}$ ". Length over all, $5\frac{3}{4}$ ".



Steel Wire, Number.....	7400	Brass Wire, Number.....	7450
Price per Dozen.....	\$6.00	Price per Dozen.....	\$6.00

Any diameter up to 2", on special order, at same price.



FINE WIRE HAND SCRATCH BRUSH.

Prices Are per Bundle of (8) Eight Ounces.

Diameter of Wire.	Commonly Known as	Steel Wire Number.	Eight Ounce Bundle.	Brass Wire Number.	Eight Ounce Bundle.
.0065"	Gold Stick	7600	\$0.90	7650	\$0.75
.005"	Half Meister	7601	1.10	7651	.90
.0045"	Meister	7602	1.14	7652	1.10
.004"	Extra Fine Meister	7603	....	7653	1.75

Note—The illustration shows a Bundle of 3 Brushes weighing (8) Eight Ounces. We can supply Bundles having 1, 2, 3, 4, 5 or 6 Brushes each. Specify exactly what you want.

SECTION AND RADIAL SEWED BUFFS.**UNBLEACHED MUSLIN, 18-PLY SECTION BUFFS.****One Row of Sewing.**

Diameters	6"	7"	8"	9"	10"	12"	14"	16"	18"
Per Section	\$0.08	\$0.10	\$0.12	\$0.15	\$0.18	\$0.24	\$0.28	\$0.40	\$0.50

UNBLEACHED MUSLIN RADIAL SEWED BUFFS, 18-PLY.

Diameters	8"	9"	10"	12"	14"	16"	18"
Per Section	\$0.06	\$0.08	\$0.10	\$0.14	\$0.19	\$0.22	\$0.28

PRINTERS' INK BUFFS, 18-PLY.**One Row of Sewing.**

Diameters	8"	9"	10"	12"	14"	16"	18"
Per Section	\$0.12	\$0.14	\$0.17	\$0.20	\$0.26	\$0.40	\$0.47

All Prices Subject to Change Without Notice.

Special prices for quantities most cheerfully given upon application.

Note—Do not fail to specify the size of **Center Hole** wanted in your Buffs.

LEAD CENTER MUSLIN BUFFS.

For Jewelers' Use.

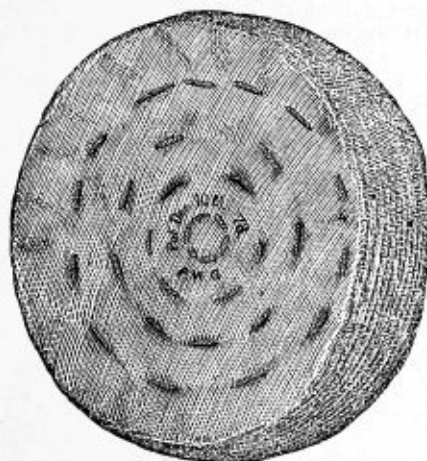
Made of Unbleached Muslin.

Diameter.	Face,	Pieces thick.	Per doz.
3"	$\frac{1}{2}$ "	54	\$2.50
4"	$\frac{1}{2}$ "	54	3.25
5"	$\frac{1}{2}$ "	54	4.00
6"	$\frac{5}{8}$ "	63	5.00

BUFFS.

Quilted or Hand Sewed.

Radial or Machine Sewed.



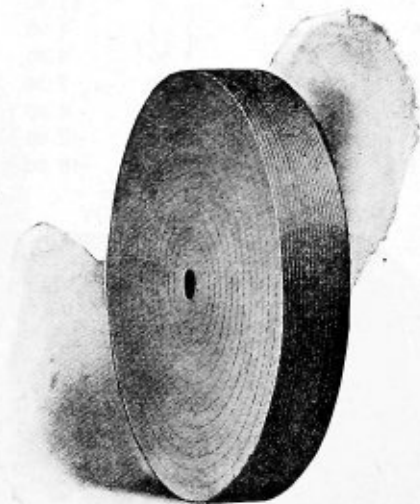
Hand Sewed.

COTTON FLANNEL			UNBLEACHED MUSLIN		
Diam.	Ply.	Doz.	Diam.	Ply.	Doz.
2"	25	\$1.25	2"	30	\$1.25
2½"	30	1.50	2½"	30	1.50
3"	30	2.00	3"	35	1.75
4"	30	2.25	4"	42	2.00
5"	30	3.60	5"	45	3.00
6"	30	4.25	6"	50	3.50
7"	30	5.50	7"	50	5.00
8"	30	7.00	8"	55	6.00
9"	30	9.00	9"	60	7.50
10"	35	12.00	10"	65	10.00
12"	40	16.00	12"	70	12.00
14"	40	22.00	14"	70	16.00

MACHINE SEWED RADIAL
BUFFS.

Unbleached Muslin.

Diam.	Dozen.	Diam.	Dozen.
7"	\$0.50	13"	\$1.80
8"	.60	14"	2.05
9"	.85	15"	2.30
10"	1.10	16"	2.55
12"	1.60	18"	3.00



Woolen "Rag" Bufs, sizes and prices same as for Cotton Flannel.

SHEEPSKIN WHEEL BUFFS.

Selected Stock.

This represents a **Stitched Buff** made of whole discs of selected skins, are built up until to the required thickness, then hand sewed with two or more rows of stitching according to diameter of buff.

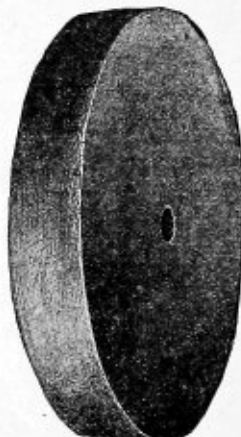
These Buffs are durable and pliable. They easily conform to special shapes or irregular surface of work.



Diameter	THICKNESS			
	1"	1½"	2"	2½"
4"	\$1 30	\$1 90	\$2 45	\$3 00
6"	1 75	2 60	3 30	4 10
7"	2 00	3 00	3 85	4 90
8"	2 40	3 40	4 40	5 40
9"	3 00	4 25	5 50	6 75
10"	3 50	5 00	6 50	8 00
12"	4 60	6 60	8 60	10 75
14"	5 75	8 25	10 75	13 25

Solid Buffs are made from carefully selected stock; instead of the layers being stitched they are cemented, making a solid wheel, yet extremely pliable.

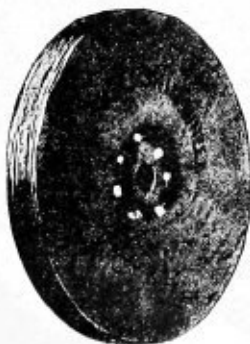
Diameter.	THICKNESS			
	1"	1½"	2"	2½"
5"	\$1 95	\$3 00	\$3 90	\$4 90
6"	2 25	3 40	4 50	5 50
8"	3 00	4 50	6 00	7 50
9"	3 75	5 50	7 50	8 25
10"	4 50	6 25	9 00	11 00
12"	6 00	9 00	12 00	14 00
14"	8 00	11 50	16 00	19 00

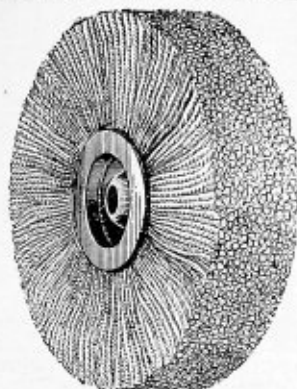


Loose Buffs are made up of whole discs of sheepskin sewed once around the hole.

Used for uneven surfaces not easily reached with either the stitched or solid Buffs.

Diameter.	THICKNESS			
	1"	1½"	2"	2½"
4"	\$1 10	\$1 65	\$2 20	\$2 75
5"	1 30	2 00	2 60	3 25
6"	1 50	2 25	3 00	3 75
7"	1 75	2 60	3 50	4 50
8"	2 00	3 00	4 00	5 00
9"	2 50	3 75	5 00	6 25
10"	3 00	4 50	6 00	7 50
12"	4 00	6 00	8 00	10 00
14"	5 00	7 50	10 00	12 50





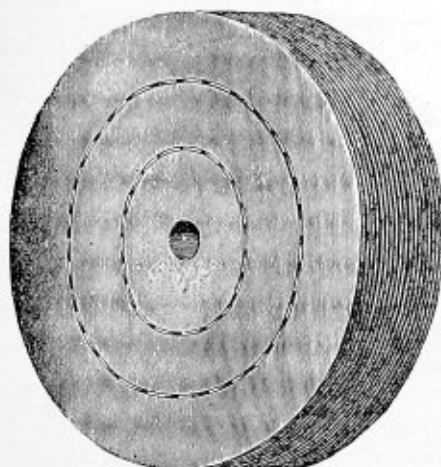
COTTON "WHEEL" BUFFS.

For Jewelers' Use.

These Buffs are made with a "Wood Center"
and filled with a Cotton Cord.

Prices are per dozen.

Diameter of wheel,	Number of Rows.	Diameter of Wood Center.				
		$\frac{5}{8}$ "	$\frac{3}{4}$ "	1"	$1\frac{1}{4}$ "	$1\frac{1}{2}$ "
	2"	$2\frac{1}{4}$ "	$2\frac{1}{2}$ "	$2\frac{3}{4}$ "	3"	$3\frac{1}{2}$ "
2	\$0 90	\$1 00	\$1 00	\$1 00	\$1 50	\$1 80
3	1 35	1 50	1 50	1 50	2 00	2 60
4	1 75	2 00	2 00	2 00	2 50	3 50
5	2 20	2 50	2 50	2 50	3 50	4 40
6	2 60	3 00	3 00	3 00	4 50	5 25



CHAMOIS BUFF WHEEL.

For Coloring and Finishing Gold
Work.

Diameters,	2"	2 1/2"	3"
Thickness,	3/4"	3/4"	3/4"
Dozen,	\$3 00	\$3 75	\$4 50
Diameters,	4"	5"	6"
Thickness,	3/4"	1"	1"
Dozen,	\$9 00	\$15 00	\$24 00

SOLDIER
BELTS.

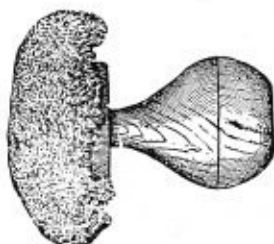
Strictly the Best Selected Belts.

Prices, 25c to 50c each.

Special prices for quantity.

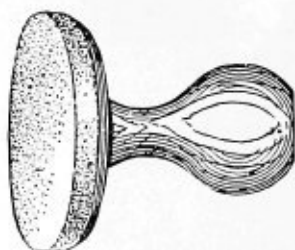
The length and width, also quality, governs price.

GOBLET, LOCKET THIMBLE AND WATCH CASE BUFFS.

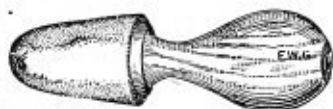


COTTON WATCH CASE BUFF.

Number,	"A"	"B"
	Large	Small
Doz.,	\$1 25	\$1 00

WATCH CASE BUFF.
Felt, Walrus or Buckskin.
Specify Which Kind.

No.,	C	D	E	G	H	J
Diam.,	3/4"	1"	1 1/4"	1 1/2"	1 3/4"	2"
Doz.,	\$0 85	\$1 00	\$1 10	\$1 25	\$1 40	\$1 50



Number "K."

THIMBLE BUFF.

Felt or Walrus.
Specify Which Kind.

Dozen, \$1 50.



LOCKET BUFF.

Felt, Walrus or Buckskin.
Specify Which Kind.

No.,	L	M	N
Diam of face,	1/2"	3/4"	1"
Doz.,	\$0 75	\$0 85	\$1 00



COTTON GOBLET BUFF.

Number "P." Diameter 3 1/2". Dozen, \$5 50.

Order by number and specify page and kind, viz.: 1 Doz. "G" Felt-84, or 1/2 Doz. "K" Walrus-84. This system avoids error and saves valuable time.

RING AND BRACELET BUFFS.



RING BUFF.

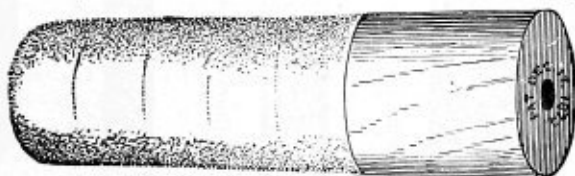
Number.....	A	B	C	D	E	
Lengths.....	3"	4"	5"	6"	7"	
Felt or Walrus	\$2 00	3 00	4 00	5 00	6 00	Doz.

Note.—Felt always sent unless Walrus is specified.



COTTON RING BUFF.

Number....	G	H	J	K	L	M	N
Lengths....	2"	2½"	3"	4"	5"	6"	7"
Dozen.....	\$2 00	2 25	2 50	3 00	3 50	4 00	5 00



COTTON BRACELET BUFF.

Number.....	"P"	"R"	"S"
Length.....	3"	4"	6"
Diameter....	1½"	1½"	1½"
Dozen.....	\$4 50	5 00	6 00

Note.—We can furnish these to order in Felt or Walrus 3" size only \$8 00 Dozen.

Wood Ring Polishing Stick made of maple, length 9" tapering from ¾" to 1"

Number "T" \$1 00 Dozen

A little care in ordering will save time and positively avoid error.

HAND POLISHING BUFFS,



Nos. 1 to 21 Flat Hand Buffs, made of Felt, Buckskin and Walrus.



Nos. 22 and 23 Flat Hand Buffs, made of Emery and Chamolis.



Nos. 24 and 25 Half-Round Hand Buffs, made of Emery and Chamolis.



Nos. 26 and 27 Round Hand Buffs, made of Emery and Chamolis.



Nos. 28 to 33 Round and Half-Round Hand Buffs, made of Felt Buckskin and Walrus.

HAND POLISHING BUFFS.

For Illustrations see opposite page.

FLAT HAND BUFFS.

Nos. 1 to 21, inclusive.

Felt Buff.		Buckskin Buff.		Walrus Buff.	
No.	Width.	No.	Width.	No.	Width.
1	$\frac{1}{4}$ "	4	$\frac{1}{4}$ "	7	$\frac{1}{4}$ "
2	$\frac{3}{8}$ "	5	$\frac{3}{8}$ "	8	$\frac{3}{8}$ "
3	$\frac{1}{2}$ "	6	$\frac{1}{2}$ "	9	$\frac{1}{2}$ "
\$1 00		\$1 00		\$1 00	
Doz.		Doz.		Doz.	
10	$\frac{5}{8}$ "	14	$\frac{5}{8}$ "	18	$\frac{5}{8}$ "
11	$\frac{3}{4}$ "	15	$\frac{3}{4}$ "	19	$\frac{3}{4}$ "
12	$\frac{7}{8}$ "	16	$\frac{7}{8}$ "	20	$\frac{7}{8}$ "
13	1"	17	1"	21	1"
\$1 25		\$1 25		\$1 25	
Doz.		Doz.		Doz.	

FLAT HAND BUFFS.

Nos. 22 and 23.

No. 22	Flat Emery Buff, all grades, 3-0 to No. 4,	\$0 25 dozen.
No. 23	Flat Chamois Buff	35 dozen.

HALF-ROUND HAND BUFFS.

Nos. 24 and 25.

No. 24	Half-Round Emery Buff	\$0 30 dozen.
No. 25	Half-Round Chamois Buff	75 dozen.

ROUND HAND BUFFS.

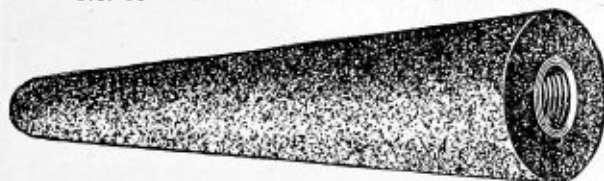
Nos. 26 and 27.

No. 26	Round Emery Buff	\$0 30 dozen.
No. 27	Round Chamois Buff	75 dozen.

ROUND AND HALF-ROUND HAND BUFFS.

Nos. 28 to 33, inclusive.

No. 28	Round Felt Ring Buff	\$2 00 dozen.
No. 29	Round Buckskin Ring Buff	2 00 dozen.
No. 30	Round Walrus Ring Buff	2 00 dozen.
No. 31	Half-Round Felt Ring Buff	1 50 dozen.
No. 32	Half-Round Buckskin Ring Buff	1 50 dozen.
No. 33	Half-Round Walrus Ring Buff	1 50 dozen.



No. 34
\$0 75 per pair.

EMERY LATHE CONE FOR RINGS.

A most desirable article. Made of solid emery. Will outwear thousands of paper shells. Has a metal taper cone to fit on brush arbor. In two grades—one to cut down solder, the other to finish next to rouge. Refuse metal can be removed in a few seconds with ammonia and gold saved if desired.

SOLDERING BURNERS



No. 1 \$1 50 Each



No. 2 \$1 25 Each

The above Burners are unquestionably the Best Burners of this kind made.

SPECIAL NOTE

If there are items in which our customers are interested, and the same are not to be found within the pages of this book, we will appreciate the opportunity of supplying the information and prices desired. It may be possible for us to serve you to advantage.



No. 4 \$1 00 Each

This is a swivel Burner and is liked by many.

Let us have your inquiries before placing your orders elsewhere

BUNSEN BURNERS.



2185

40c each



2189

25c each



2190

25c each



2195

50c each

No. 2185 Bunsen Burner, height 3 inches, diameter of tube $\frac{3}{8}$ inch.

No. 2189 Spider, } to fit Burner No. 2185.

No. 2190 Crow's Nest, }

No. 2195 Bunsen Burner, brass, nickel-plated, height 2 inches, diameter of tube $\frac{1}{4}$ inch.



2200-05

30c each



2125

75c each



2130

\$1 00 each

No. 2200 With flame-check, height 6 inches, diameter of tube $\frac{7}{8}$ inch.

No. 2205 With flame-check, height 6 inches, diameter of tube $\frac{1}{2}$ inch.

No. 2125 (Improved), with flame-check and gas regulator. It is obvious that any desired flame can be had readily and conveniently. Height 6 inches, diameter of tube $\frac{1}{2}$ inch.

No. 2130 Self-Adjusting Bunsen Burner, for burning gas of various qualities. Height 6 inches, diameter of tube $\frac{1}{2}$ inch.

ATMOSPHERIC BURNERS.



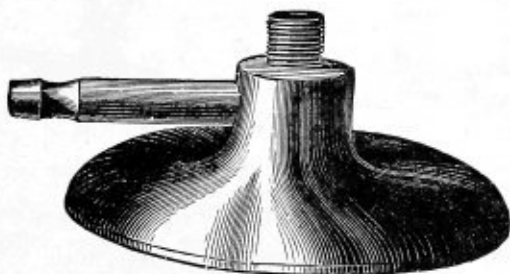
THE MONITOR (ALL IRON).

		Doz.
No. 1812	Top 2 inches,	\$5 00
No. 645	Top 3 inches,	7 00
No. 646	Top 4 inches,	9 00



THE NOVELTY, No. 647.

2 inch Iron Top, Brass Stem.	
Per Gross	\$25 00
Per Dozen	2 50



All Burners shown on this page will fit this stand.

		Dozen.	Gross.
No. 648	3 inch Diameter,	\$2 50	\$25 00
No. 1230	4½ inch Diameter,	6 00	

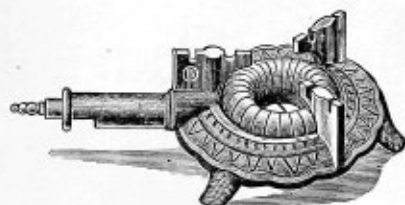


No. 2271

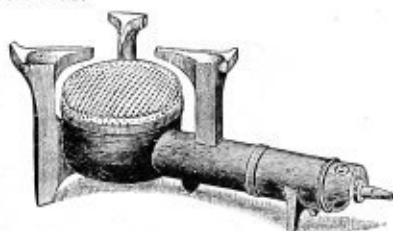
This is a splendid Bunsen Burner.

Dozen, \$1 50

BUNSEN BURNERS.



2277-78



2279-80

Burner Radial, made of cast iron, very strong and durable.

No. 2277 Small size, diameter of the burner $3\frac{1}{2}$ inches.

No. 2278 Large size, diameter of the burner 5 inches.

No. 2279 Small size. Burner, solid flame, for quick boiling.

No. 2280 Large size, diameter of burner 4 inches. Burner, solid flame, for quick boiling.



2250



2255-70



2275

No. 2250 Low shape, height 3 inches, diameter of tube $\frac{1}{8}$ inch.

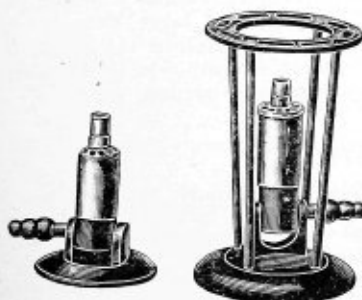
No. 2255 Low shape, height $4\frac{1}{2}$ inches, diameter of tube $\frac{1}{2}$ inch.

No. 2260 Low shape, height $4\frac{1}{2}$ inches, diameter of tube $\frac{5}{8}$ inch.

No. 2265 Low shape, height $4\frac{1}{2}$ inches, diameter of tube $\frac{3}{4}$ inch.

No. 2270 Low shape, height $4\frac{1}{2}$ inches, diameter of tube 1 inch.

No. 2275 Low shape, made of cast iron, extra large, with gauze top, height 5 inches, diameter $2\frac{1}{4}$ inches, extreme length 14 inches.



1



2



3

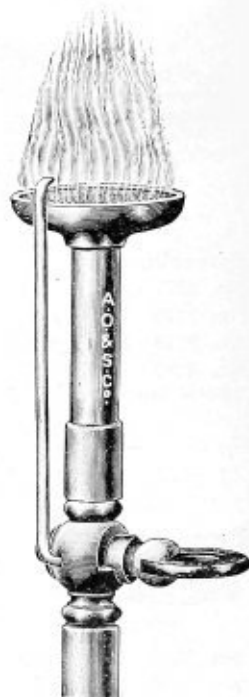
Burner.	Dozen.
No. 1	\$6 00
No. 2	9 00
No. 3	9 60

These are ideal Laboratory Burners.

BUNSEN AND GAS BURNERS.



No. 726.
Price 75c each.
Read article at bottom of page.



\$1 00 each.

This Burner is perfect in every detail, of the highest power possible for the size, can be turned down for the merest flicker without lighting back, and can be mounted on tubes in any form or number when very high powers are required.

WITHOUT STAND.
As Shown in Cut.

No.	Diam. across top of gauze	Height.	Each.
5 SB	$\frac{7}{8}$ "	$3\frac{3}{4}$ "	\$1 50
10 SB	$1\frac{1}{4}$ "	$4\frac{3}{4}$ "	1 80
14 SB	$1\frac{1}{2}$ "	6"	2 25

ON BRASS STAND.

5 SBM	$\frac{7}{8}$ "	$4\frac{3}{4}$ "	\$2 15
10 SBM	$1\frac{1}{4}$ "	$5\frac{3}{4}$ "	2 60
14 SBM	$1\frac{1}{2}$ "	7"	3 10

This Burner gives a Regular Gas Flame; it is not a Bunsen Burner.

This Burner is known by the manufacturing jeweler as a Lamp House Burner. It has a pilot-pipe which keeps the large flame ever ready for use unless the cock is turned off entirely. It is the Best Burner for the purpose made.

No. 726 Price, \$0 75.

For Tempering Drills, Punches, Chisels, Small Tools, Etc.

This heater, in many instances, takes the place of a forge in tempering machinists' small tools and is more convenient and economical in time and fuel. It is provided with a collar with holes corresponding to those in the lower part of the tube. By this arrangement the supply of air can be regulated and the intensity of the flame controlled.

Full directions accompanying each Burner.

Lafayette Jewel Burnisher and Pivot Reducer



\$2.00 each

This tool is a good one for many reasons. Above all is the fact that it simplifies the task of reducing the size of pivots, both straight and conical. Every watchmaker dislikes to use an oilstone slip, on balance pivots especially.

This tool is made with two square corners for use on straight or pinion pivots and two rounded corners for conical or balance staff pivots.

Nothing but a little oil is needed in connection to rapidly and uniformly reduce the pivot to the size desired. The pivot is left smooth and even and needs only a touch with boxwood or bell metal slip and diamantine to give it a high polish.

Made of fine quality hard sapphire and mounted in hard rubber case with cap. The tool is also unexcelled as a jewel burnisher for giving a high polish to the sides and edges of balance and plate jewels.

Lafayette Jewel Stripper



\$2.00 each

Every expert watchmaker will appreciate a tool of this nature.

It is the only tool that gives to the jewel that perfectly finished touch, which cannot possibly be given with the graver.

It is made of genuine hard sapphire, the finest for the purpose that we can procure.

Used in the jewelers rooms of the leading watch factories and by expert repairers wishing to do first-class finished work.

Made with perfect angle and edges by an expert who is an authority on jewels and jewelers.

There is everything for the workman to gain by possessing and using this tool and the price is as low as consistent with the quality of the sapphire.

STEEL "SILVERSMITH'S" BURNISHERS.
 Made of the Best Tool Steel—Mirror Finished.
 All Illustrations are $\frac{1}{4}$ of their actual size.



No. 890A



No. 890N



No. 890B



No. 890O



No. 890C



No. 890P



No. 890D



No. 890R



No. 890E



No. 890S



No. 890F



No. 890T



No. 890G



No. 890U



No. 890H



No. 890V



No. 890I



No. 890W



No. 890K



No. 890X



No. 890L



No. 890Y



No. 890M



No. 890Z

All above Burnishers \$1 00 each.

STEEL { MIRROR FINISHED } BURNISHERS.

All Burnishers are
Fitted With
Rosewood Handles.

Straight Blades.

No.	Length of Blade	Price per Dozen
A	1 1/4"	\$3 25
B	1 1/2"	3 50
C	1 3/4"	3 75
D	2"	4 00
E	2 1/4"	4 25
G	2 1/2"	4 50
H	3"	4 75
J	3 1/2"	5 00
K	4"	5 25
L	4 1/2"	5 50
M	5"	6 00

Bent Blades.

No.	Length of Blade	Price per Dozen
N	1 1/4"	\$3 25
P	1 1/2"	3 50
R	1 3/4"	3 75
S	2"	4 00
T	2 1/4"	4 25
U	2 1/2"	4 50
V	3"	4 75
W	3 1/2"	5 00
X	4"	5 25
Y	4 1/2"	5 50
Z	5"	6 00



Straight Shape
Full Size.
2" Blade



Bent Shape
Full Size
1 3/4" Blade

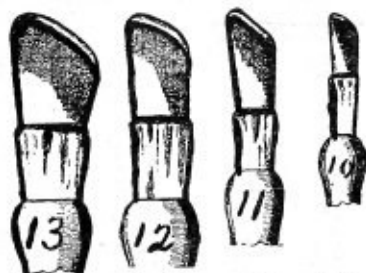


Spear Shape
Full Size
Dozen \$5 00

BLOODSTONE BURNISHERS.

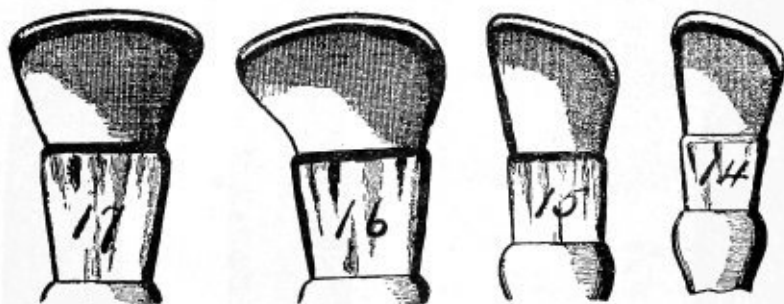
All illustrations are approximately $\frac{3}{4}$ actual size.

All Prices are Each.

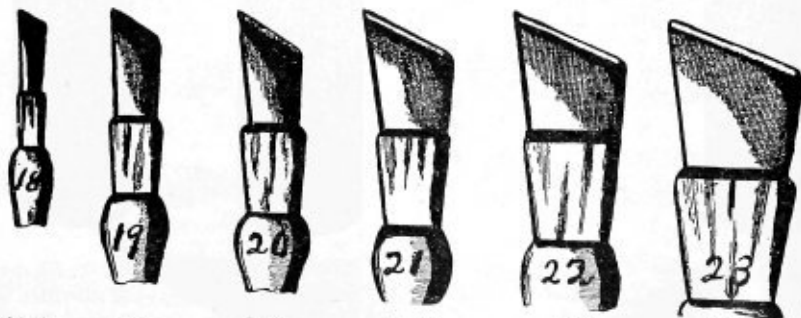


\$1 62 1 25 95 70

These are Nature's product. We Do Not Guarantee them. They are selected and finished by experts with years of experience. A stone once accepted cannot be returned for any cause.



\$5 00 6 30 2 50 2 15



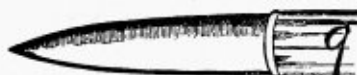
\$0 65 70 1 10 1 35 2 00 2 25

BLOODSTONE BURNISHERS.

All illustrations are approximately $\frac{3}{4}$ actual size. We do not guarantee these. Read this and the opposite page.

All Prices are Each.

Each \$2 15



\$3 35



Note—Customers are requested to examine each stone carefully—if found questionable return same at once. Stones once used or held for some time cannot be returned for credit or exchange.



\$0 65



85



1 10



1 35



1 65



2 40



\$3 30



6 40

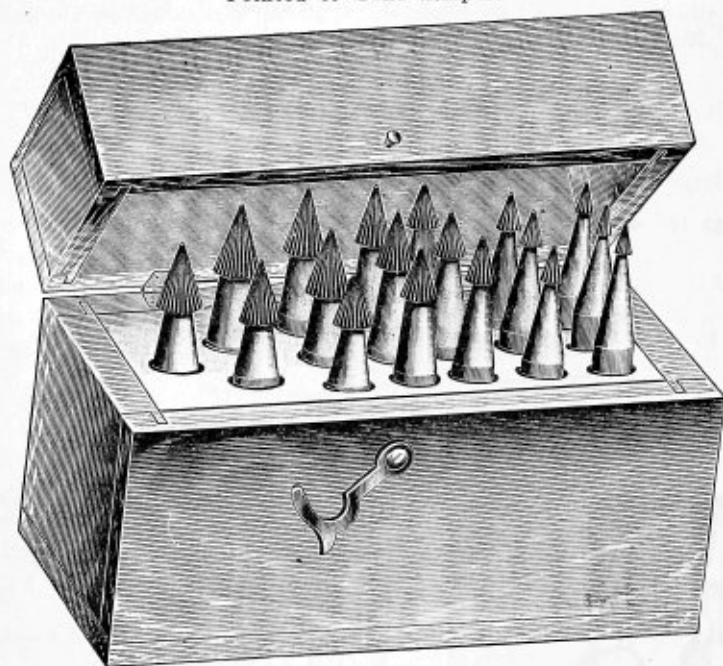


5 40



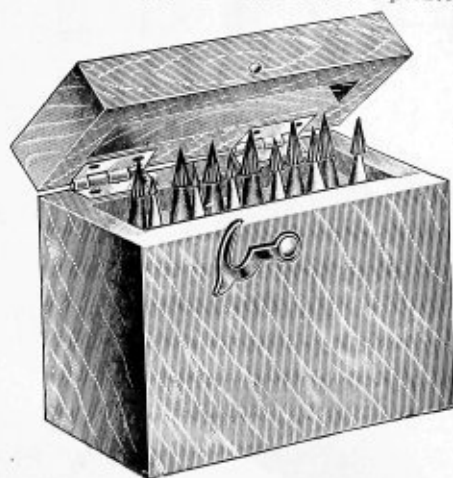
4 40

SETTING BURRS.
Pointed or Cone Shapes.



Set "C" has 18 sharp pointed Burrs as shown \$4 50

Set "E" has 18 blunt pointed Burrs 4 50

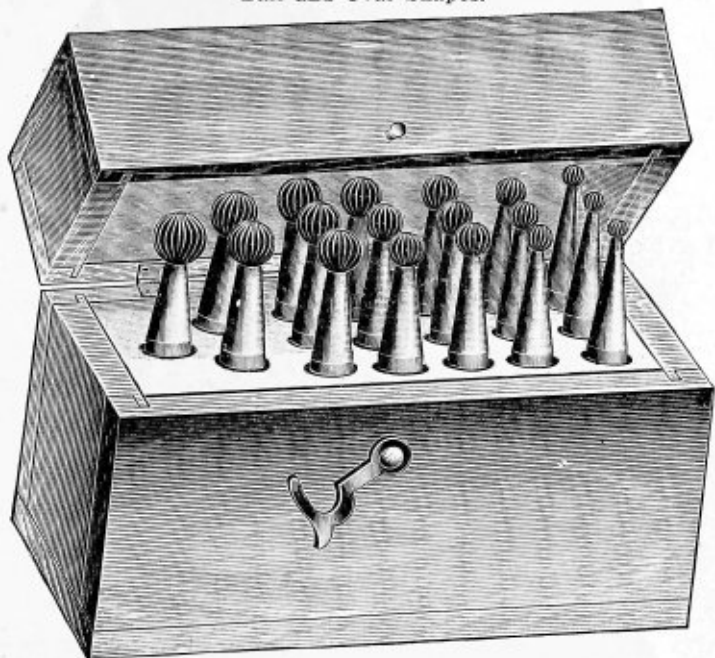


Set "12 S" has 12 sharp pointed
Burrs, in neat box, as shown, \$2 50

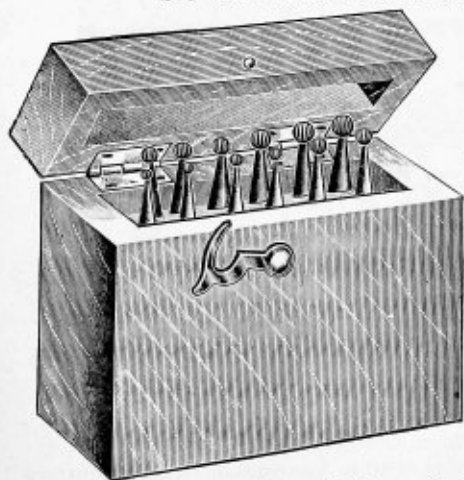
Set "O" has 12 sharp pointed Burrs
mounted in leather case. Shanks fit
Pump Drill, \$2 50.

SETTING BURRS.

Ball and Oval Shapes.



Set "D 18" has 18 Ball Burrs in box, as shown, \$4 50.

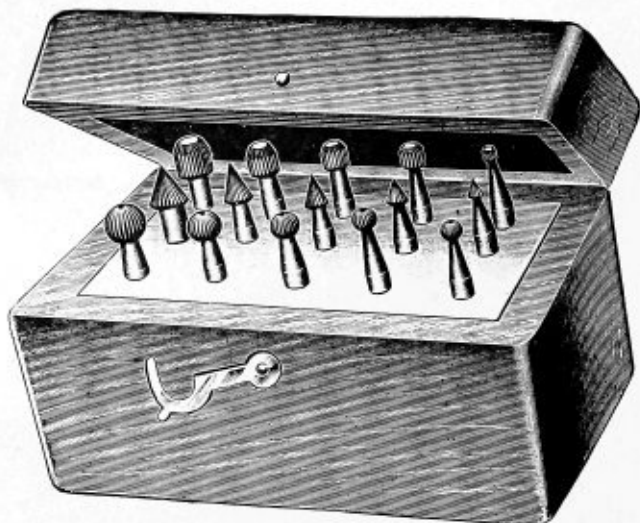


Set "D 12" This set has 12 Ball Burrs in a neat box, as shown, \$2 50.

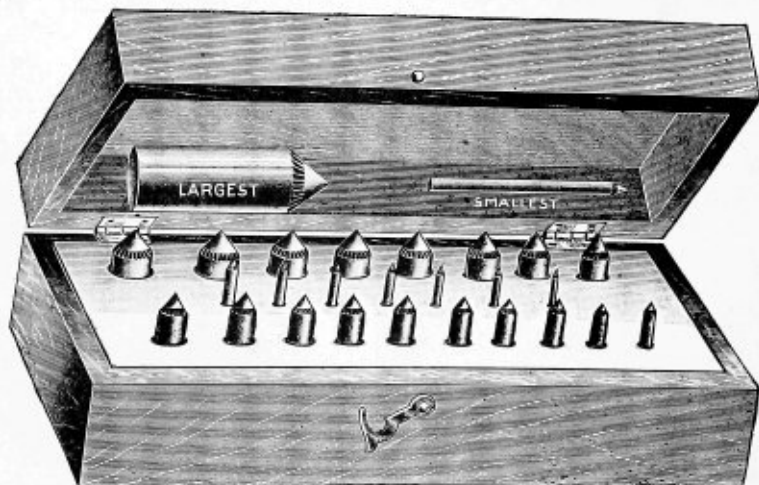
Set "P" has 12 Ball Burrs mounted in leather case, shanks fit Pump Drill, \$2 50.

Oval Shape, Set "F" has 18 Burrs in box. Sizes same as Set "D 18," \$4 50.

SETTING BURRS.

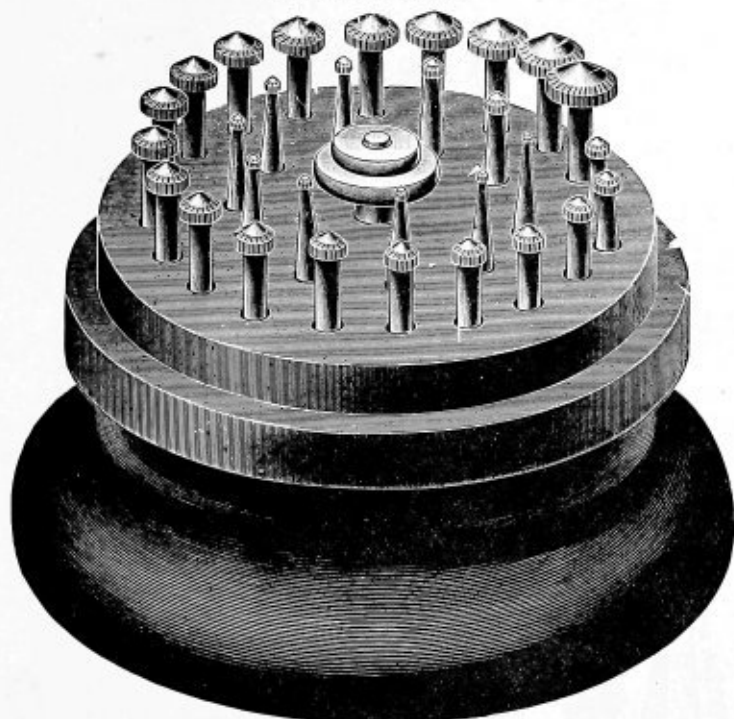


Set No. 82 contains 5 Burrs each of 3 shapes.
15 Burrs in a neat Wood Box.
Illustration shows exact sizes.
Set complete, \$4 50.



Set "B" contains 25 Burrs in a neat Wood Box. \$4 50.
These Burrs are specially designed for Milling Bearings of Rings, Clusters,
Ear Drops, etc. They will produce a smooth, finished surface.

SETTING BURRS.



Set "A" Complete as shown, \$6 00.

Illustration shows exact sizes.

This set contains 30 Burrs mounted in a neat wood block. A neat wood cover is fitted to each block.

With these Burrs an "oval" setting can be worked out nicely.



Set "K" \$0 85



Set "M" \$0 75

Note—Read article on page 20.

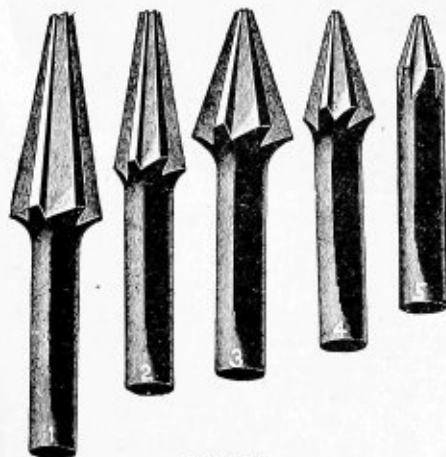
SILVERSMITHS' OR DIE SINKERS' BURS.



SET "A"

Set of six Burs \$2 50

SETTING REAMERS



Set "B"

Set of Five \$4 00



Set "C"

Set of Four \$1 75

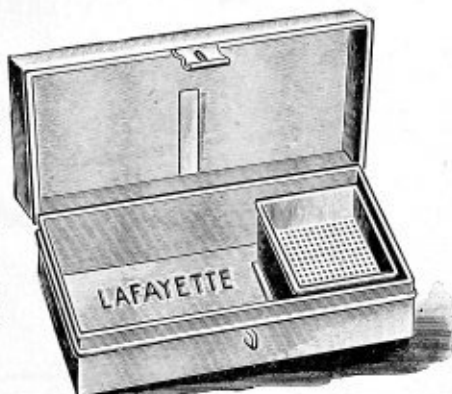
Note.—When ordering goods from this catalog be sure to always specify page number, beside the item number. It saves us much time in filling orders and it will save you much valuable time in checking off your invoice.

BOXES.

The adjoining illustration represents a Jeweler's Work Box, made of Heavy Tin, carefully and nicely finished.

Size No. 1, \$1.25 each; 12" long x 8" wide x 5 $\frac{3}{4}$ " deep; inside Tray 3 $\frac{3}{4}$ x4 $\frac{1}{2}$ x5" deep.

Size No. 2, 75c each; 8" long x 4" wide x 2 $\frac{1}{4}$ " deep; inside Tray 2 $\frac{1}{2}$ x3 $\frac{1}{4}$ x2" deep.



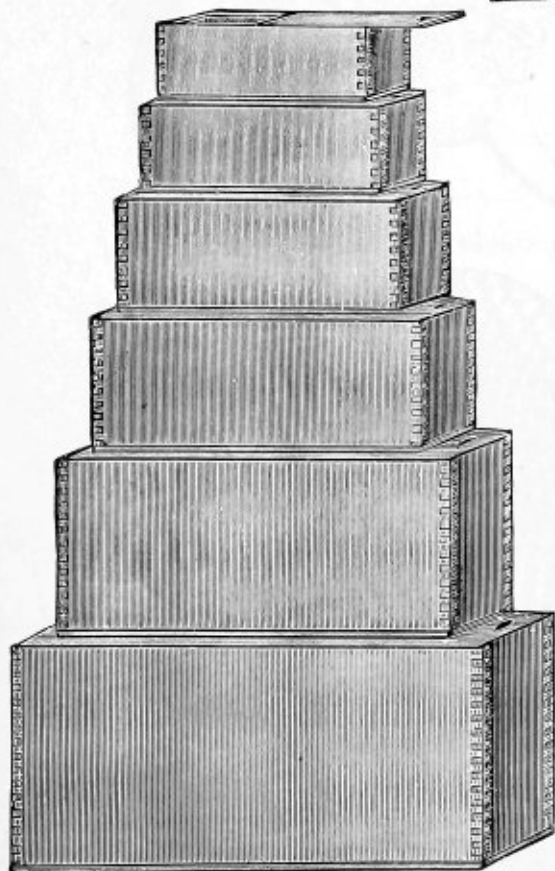
BASSWOOD
LOCK-CORNER
MAILING
BOXES,

made of $\frac{1}{8}$ " stock, each Box fitted with a slide cover.

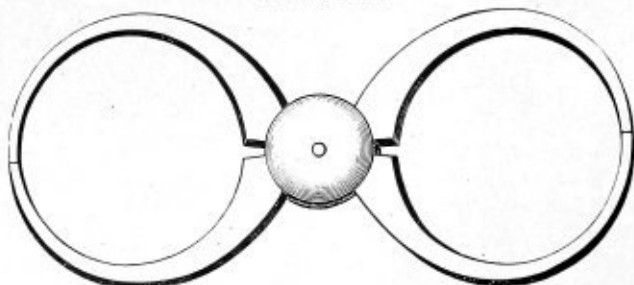
No. 1	.....	\$1.20	per 100
No. 2	.....	1.30	"
No. 3	.....	1.35	"
No. 4	.....	1.40	"
No. 5	.....	1.50	"
No. 6	.....	1.60	"
No. 7	.....	2.00	"
No. 8	.....	2.00	"
No. 9	.....	2.50	"

Inside Measurements.

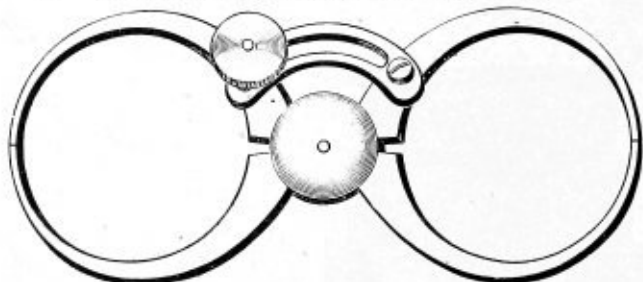
No.	Long	Wide	Deep
1	.....1 7/8x1	5/16x	3/4
2	.....2 1/2x1	7/16x	3/4
3	.....2 1/4x1	3/4x1	1/16
4	.....2 7/8x1	13/16x1	
5	.....2 5/8x2	x1	1/2
6	.....3 1/8x2	1/2x1	3/4
7	.....4	x2 1/2x1	1/4
8	.....3 1/8x3	1/8x2	
9	.....5	x3 3/4x2	1/4



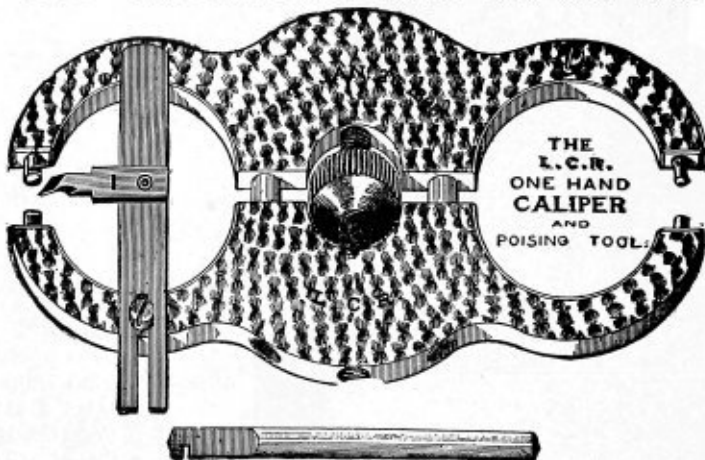
CALIPERS.



No. "A" Plain Brass Caliper.....\$2 50 Dozen



No. "B" Plain Brass Caliper with Set Screw \$3 00 Dozen



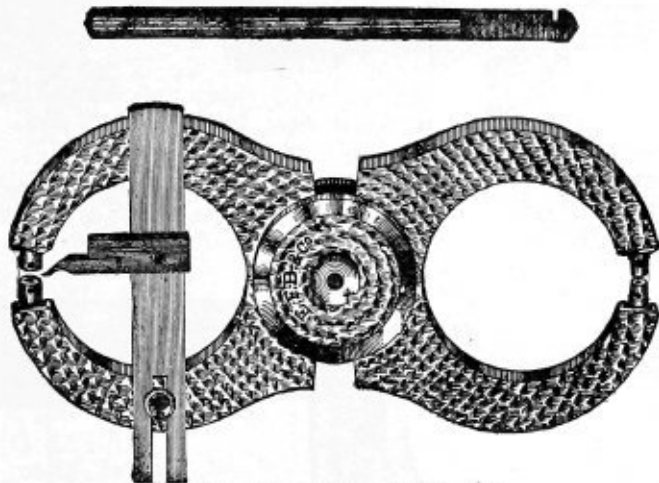
No. 500 \$3 00 each

The jaws of this Caliper open parallel.

Note.—We can furnish this caliper (No. 500) jeweled. Read article at the bottom of opposite page.

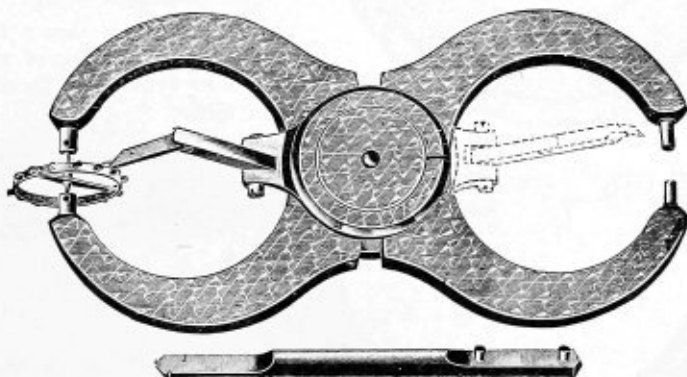
CALIPERS.

All illustrations are full size.



No. 501 New Style \$2 00 each

This Caliper is known as a Balance Wheel Truing Caliper.



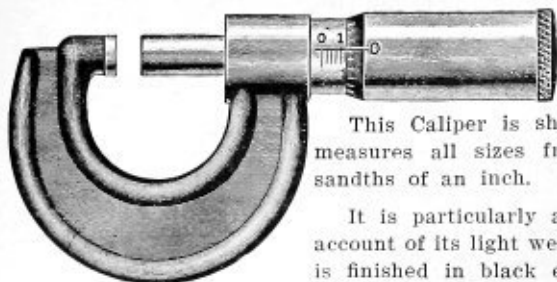
No. 410 \$2 25 each

New Caliper with Swing Level Guide. With it you can easily see your work and can quickly adjust your guide.

Note—We can supply the above calipers, also No. 500 on the opposite page, jeweled in fine Sapphire jewels for poising Balances. One end will have jewels that will take any size pivots for truing purposes. Price is nominal and will be cheerfully given upon request.

Always affix page number thus: 1 only 410-105.

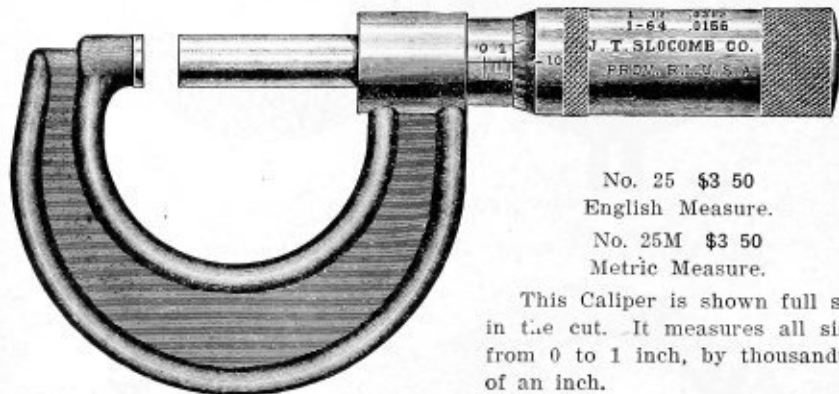
SLOCOMB MICROMETERS.



No. 22 \$3 00

This Caliper is shown full size in the cut. It measures all sizes from 0 to $\frac{1}{2}$ inch, by thousandths of an inch.

It is particularly adapted for a pocket tool, on account of its light weight (only $1\frac{3}{4}$ oz.). The frame is finished in black enamel.



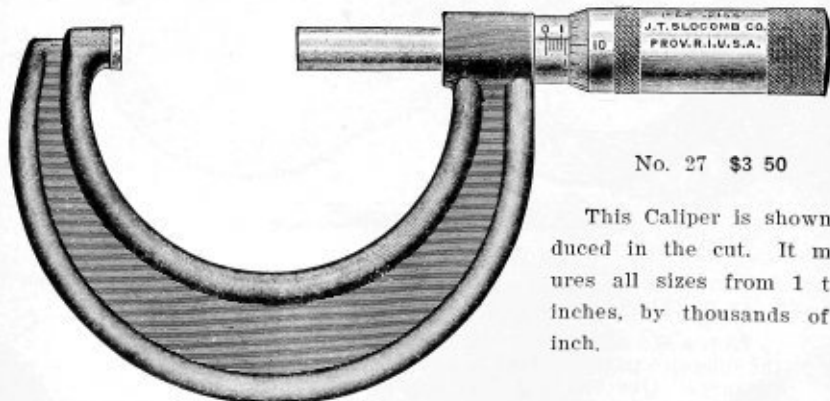
No. 25 \$3 50

English Measure.

No. 25M \$3 50

Metric Measure.

This Caliper is shown full size in the cut. It measures all sizes from 0 to 1 inch, by thousandths of an inch.

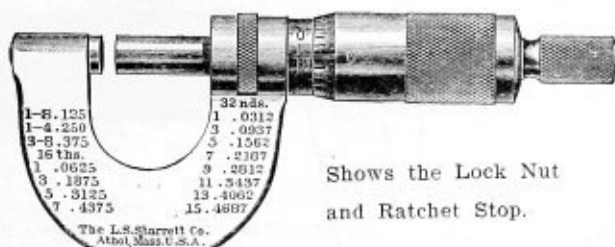


No. 27 \$3 50

This Caliper is shown reduced in the cut. It measures all sizes from 1 to 2 inches, by thousands of an inch.

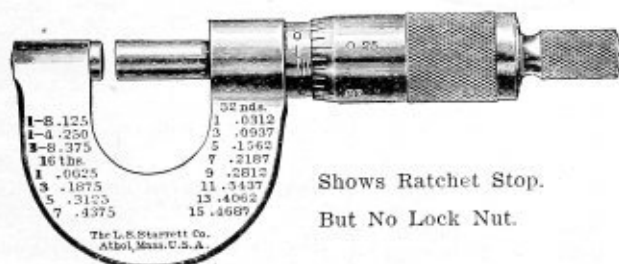
We supply a Ratchet Stop to any of the above Calipers for 50c extra. If same it wanted, be sure to specify same.

STARRETT'S HALF INCH MICROMETERS.



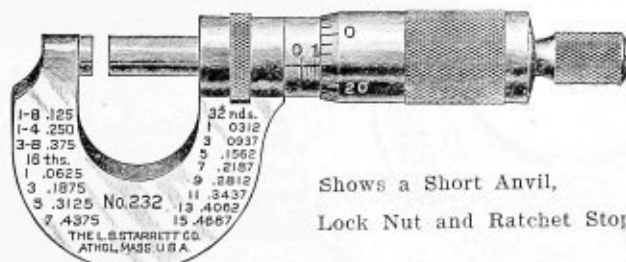
Shows the Lock Nut
and Ratchet Stop.

No.	Price	Graduated To Read	
215	\$5 00	1-1,000 ths.	} Has Lock Nut and Ratchet Stop.
219	6 00	10-1,000 ths.	



Shows Ratchet Stop.
But No Lock Nut.

No.	Price	Graduated To Read	
216	\$4 50	1-1,000 ths.	} Has Ratchet Stop But No Lock Nut.
218	5 50	10-1,000 ths.	



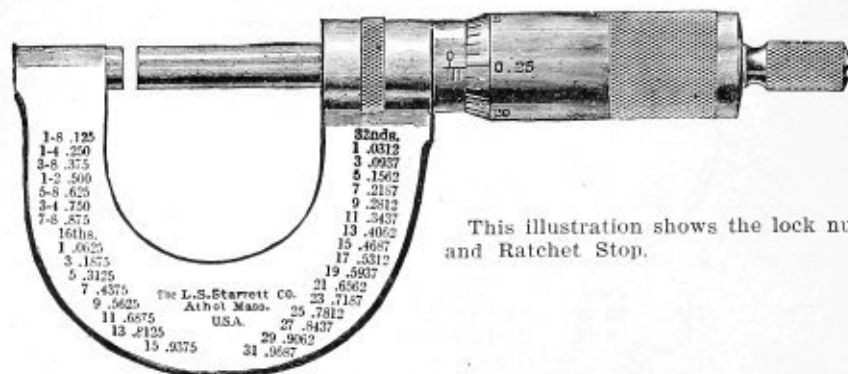
Shows a Short Anvil,
Lock Nut and Ratchet Stop.

The anvil is shortened, for use in places where the ordinary anvil is too long to be inserted.

No.	Price	Graduated To Read	
232	\$5 00	1-1,000 ths.	} Has Ratchet Stop And Lock Nut.
233	6 00	10-1,000 ths.	

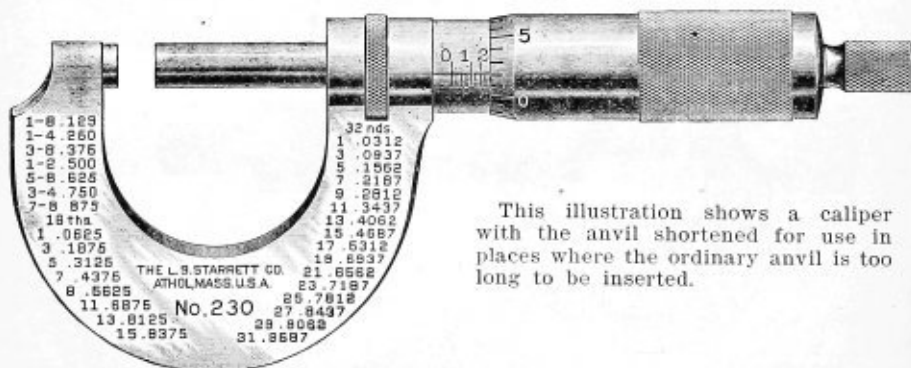
Leather Case Extra, 50 Cents Each.
Remember Our New System for Ordering, viz:
1 only No. 215-107—This way avoids error.

STARRETT'S ONE INCH MICROMETERS.



This illustration shows the lock nut and Ratchet Stop.

No.	Price.	Graduated to Read.	
3	\$6 00	1-1000ths	} Has lock nut and Ratchet Stop.
113	7 00	10-1000ths	
203	5 00	1-1000ths	} Has neither lock nut nor Ratchet Stop.
209	6 00	10-1000ths	
201	5 50	1-1000ths	} Has lock nut but no Ratchet Stop.
207	6 50	10-1000ths	
202	5 50	1-1000ths	} Has Ratchet Stop but no lock nut.
208	6 50	10-1000ths	



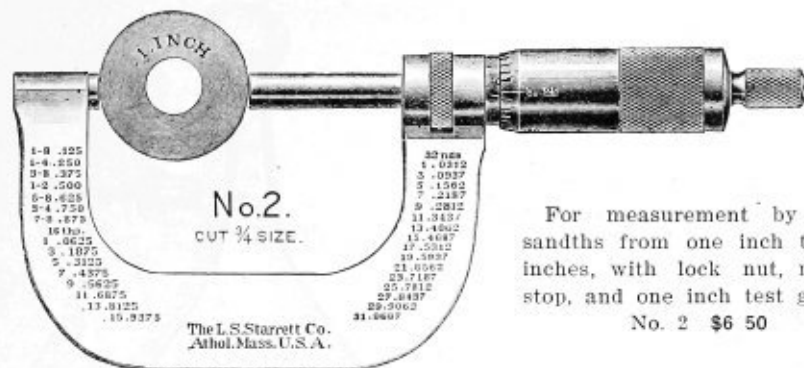
This illustration shows a caliper with the anvil shortened for use in places where the ordinary anvil is too long to be inserted.

No.	Price.	Graduated to Read.	
230	\$6 00	1-1000ths	} Has lock nut and Ratchet Stop.
231	7 00	10-1000ths	

Leather Case extra, 50 cents each.

Note—By writing your orders viz.: 1 only No. 207-108—you will be sure to get the right article, and your Bill will show you the page on which you can find the list to check your Bill.

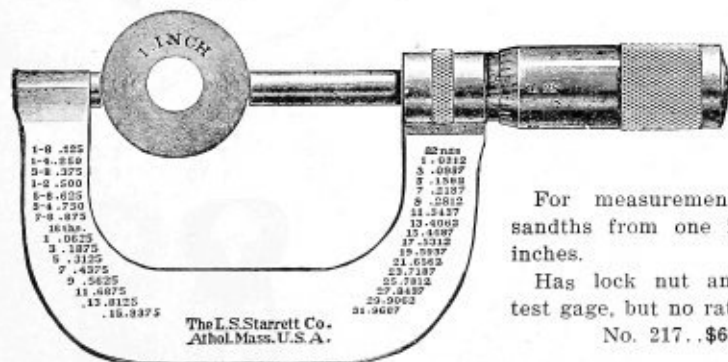
STARRETT'S TWO INCH MICROMETERS.



For measurement by thousandths from one inch to two inches, with lock nut, ratchet stop, and one inch test gage.

No. 2 \$6 50

No. 213 \$7 50 { For measurement by ten thousandths from one inch to two inches, with lock nut, ratchet stop, and one inch test gage.

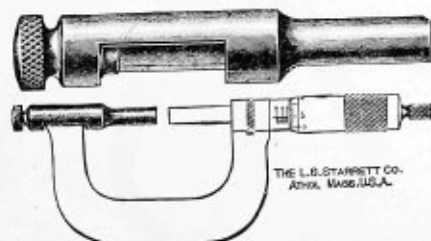


For measurement by thousandths from one inch to two inches.

Has lock nut and one inch test gage, but no ratchet stop.

No. 213 \$7 50

No. 214 \$7 00 { For measurement by ten thousandths from one inch to two inches. Has lock nut and one inch test gage, but no ratchet stop.



ATTACHMENT FOR TWO INCH MICROMETER.

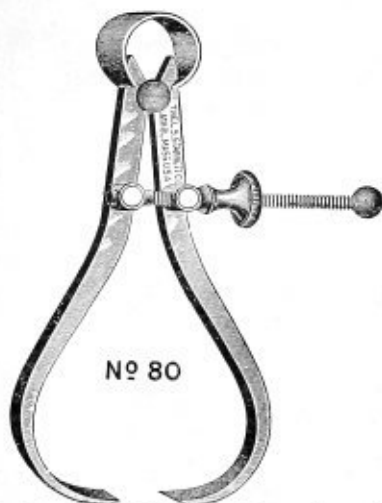
This attachment, by means of which a 2 inch micrometer may be instantly converted into a 1 inch tool, will be furnished, when ordered, with any of our 2 inch or 50 millimeter micrometers.

No. 212 \$2 00

Use our new system in writing your orders—it will save you much valuable time. Have your order read—viz:—

1 only No. 2-109.

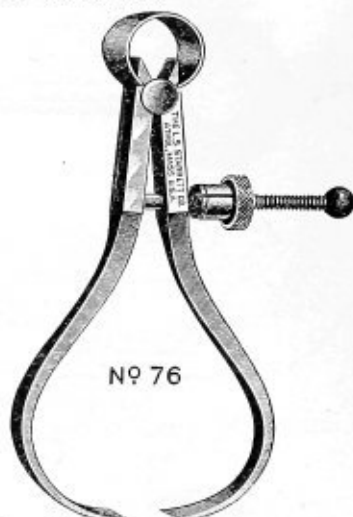
THREAD (STARRETT'S) CALIPERS.



No 80

Sent with solid nut unless otherwise ordered.

Size.	Solid Nut.	Spring Nut.
3"	\$0 70	\$0 85
4"	75	90
5"	80	95



No 76

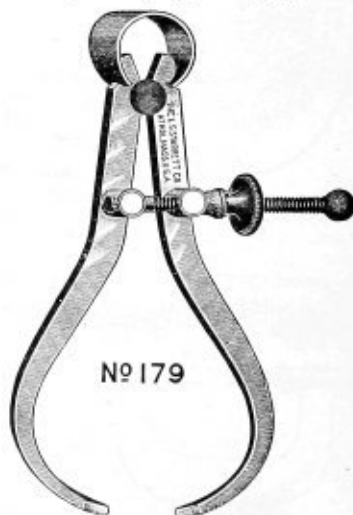
Sent with spring nut unless otherwise ordered.

Size.	Solid Nut.	Spring Nut.
3"	\$1 00	\$1 15
4"	1 10	1 25
5"	1 10	1 25

These calipers (No. 179), are designed for measuring the diameter at bottom of threads on the outside of screws.

Sent with solid nut unless otherwise ordered.

	Solid Nut.	Spring Nut.
4"	\$0 75	\$0 90
5"	80	95
6"	85	1 00



No 179

Order calipers this way—viz.: 1 only 3" solid, No. 80-110, or 1 only 4" spring, No. 179-110.

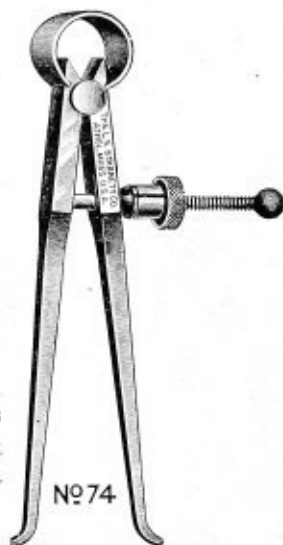
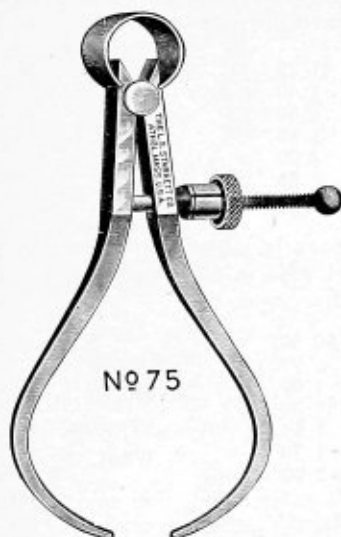
FAY (STARRETT'S) CALIPERS.

Drop Forged from Bar Steel.

Prices, Each.
Outside or Inside, Spec-
ify which You Want.

Length.	Spring Nut.	Solid Nut.
2 1/2"	\$1 15	\$1 00
3"	1 15	1 00
4"	1 25	1 10
5"	1 25	1 10
6"	1 50	1 35
8"	1 75	1 60

Fay's calipers always
sent with Spring Nut
unless otherwise or-
dered.



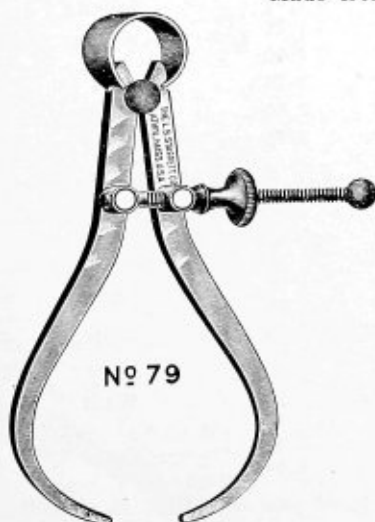
YANKEE (STARRETT'S) CALIPERS.

Made from Sheet Spring Steel.

Prices, Each. Outside or Inside, specify
which you want.

Yankee Calipers always sent with solid
nut, unless otherwise ordered.

Length.	Solid Nut.	Spring Nut.
2 1/2"	\$0 65	\$0 80
3"	70	85
4"	75	90
5"	80	95
6"	85	1 00
8"	1 00	1 15
10"	1 35	1 50



Always affix page number to items ordered.

STARRETT'S CALIPERS.

Lock-Joint Transfer Calipers may be used inside of chambered cavities, over flanges, etc., removed and replaced without losing the size calipered.



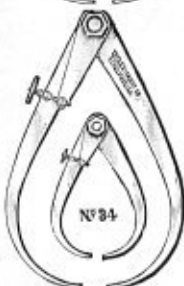
Prices	4"	\$1 25	
Each	5"	1 40	Specify
Inside	6"	1 50	Which
or	8"	1 75	You
Outside.	10"	2 00	Want.
	12"	2 25	

Lock-Joint Calipers are instantly adjusted to their full extent, and as quickly locked firm in the joint, and yet provided with a sensitive adjustment.



Prices	4"	\$0 90	
Each	5"	95	Specify
Inside	6"	1 00	Which
or	8"	1 25	You
Outside	10"	1 50	Want.
	12"	1 75	
	14"	2 00	

Perfected Firm-Joint Screw Adjusting Calipers.



Prices	4"	\$0 90	
Each	6"	1 00	Specify
Inside	8"	1 25	Which
or	10"	1 50	You
Outside.	12"	1 75	Want.
	14"	2 00	
	16"	2 25	

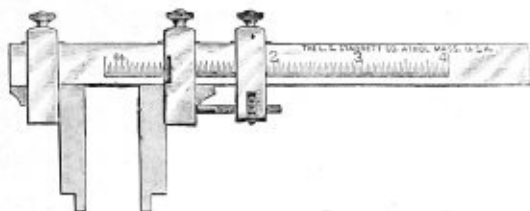
Improved Firm-Joint Calipers, drawn together by means of a screw.



	3"	\$0 40	
	4"	50	
Prices	5"	55	Specify
Each	6"	65	Which
Inside	8"	80	You
or	10"	90	Want.
Outside.	12"	1 00	
	14"	1 50	
	16"	1 75	
	18"	2 10	
	20"	2 50	

By affixing page numbers to all items ordered you save time in checking your bills.

STARRETT'S CALIPER SQUARES.

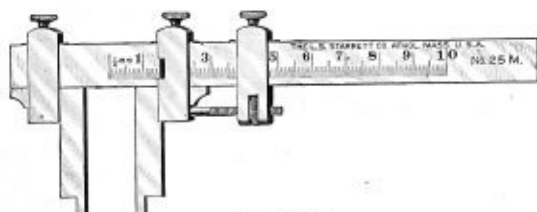


No. 25.

For both outside and inside measure. The beam is graduated in 64ths on one side and 100ths on the other.

A	3 in., with adjusting screw	.....\$3 50	D	Without	.....\$3 00
B	4 in., with adjusting screw	..... 4 00	E	Without	..... 3 50
C	6 in., with adjusting screw	..... 5 50	G	Without	..... 5 00
	With hardened jaws, extra	..... 1 50			
	In Leatherette case, extra	..... 75			

Sent with adjusting screw and without case unless otherwise ordered.



No. 25M.

Same as No. 25, except that the beam is graduated on one side in millimeters and on the other in 1/2 millimeters.

H	10 cm., with adjusting screw	.....\$4 00	K	Without	.....\$3 50
J	15 cm., with adjusting screw	..... 5 50	L	Without	..... 5 00
	With hardened jaws, extra	..... 1 50			
	In Leatherette case, extra	..... 75			

Sent with adjusting screw and without case unless otherwise ordered.

No. 25M&E.

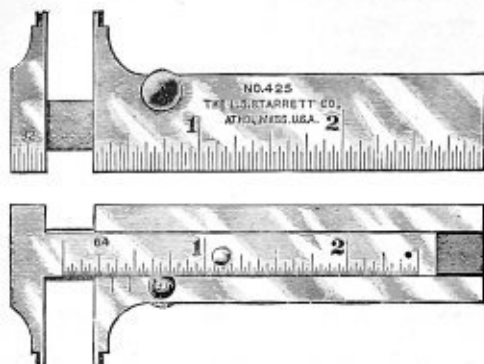
The same as No. 25, except that the beam is graduated in 1/2 millimeters on one side and in 64ths inch on the other.

M	4 in., with adjusting screw	.....\$4 00	O	Without	.....\$3 50
N	6 in., with adjusting screw	..... 5 50	P	Without	..... 5 00
	With hardened jaws, extra	..... 1 50			
	In Leatherette case, extra	..... 75			

Sent with adjusting screw and without case unless otherwise ordered.

When ordering do not fail to affix page number to each item, viz.: 1 only "D"-113.

STARRETT'S POCKET SLIDE CALIPERS.



No. 425

Graduated in 32ds and 64ths.
The improved clamping device
is a valuable feature.

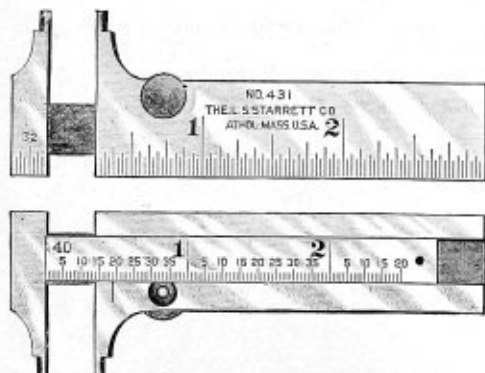
3" size \$2 00

5" size 3 00

No. 425A	3" \$2 00	{	Same as No. 425 excepting graduated in 32ds on the stock and 100ths on the slide.
	5" 3 00		

No. 425M	7cm \$2 00	{	Same as No. 425, except that the graduations are metric. The 7cm. is graduated in $\frac{1}{2}$ millimeters on slide and millimeters on stock. The 13cm. is graduated in millimeters on one edge and $\frac{1}{2}$ millimeters on the other edge of slide, and in millimeters on stock.
	13cm 3 00		

No. 425M&E	3" \$2 00	{	Same as No. 425, except that the graduations are in $\frac{1}{2}$ millimeters on one edge and 64ths inch on the other edge of slide, and in 32ds inch on the stock.
	5" 3 00		



This Caliper is known as a
BUTTON GAGE No. 431

This gage is the same size and similar to No. 425 Pocket Slide Caliper. The difference is that this gage is graduated on the slide to 40ths of an inch.

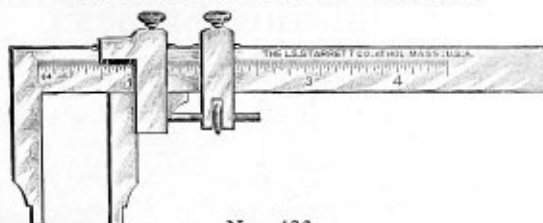
Special attention is called to the fact that every fifth line is figured, so as to assist the user to more quickly read the 40ths, as shown in the cut.

3" size \$2 00

5" size 3 00

Use our system of ordering and you will be greatly pleased with its value as a time saver, also for avoiding error.

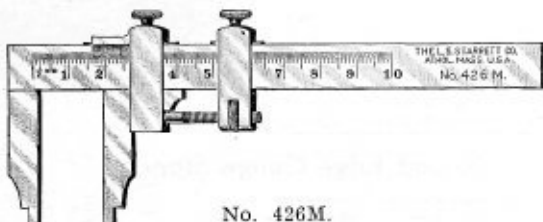
STARRETT'S CALIPER SQUARES.



No. 426.

This Caliper Square is designed both for inside and outside measurements. It is made with firm and adjustable jaw. The beam is nicely graduated on one side in 64ths and on the other in 100ths of an inch. With the adjusting screw the sliding head can be more accurately set to the graduations than without it. Sent with adjusting screw and without case unless otherwise ordered.

A	3 in., with adjusting screw	\$3 75	D	Without	\$3 00
B	4 in., with adjusting screw	4 50	E	Without	3 50
C	6 in., with adjusting screw	7 50	G	Without	5 50
	With hardened jaws, extra				1 50
	In Leatherette case, extra				75
	Sent with adjusting screw and without case unless otherwise ordered.				



No. 426M.

Same as No. 426, only with beam graduated on one side in $\frac{1}{2}$ millimeters and on the other in millimeters.

H	10 cm., with adjusting screw	\$4 50	K	Without	\$3 50
J	15 cm., with adjusting screw	7 50	L	Without	5 50
	With hardened jaws, extra				1 50
	In Leatherette case, extra				75
	Sent with adjusting screw and without case unless otherwise ordered.				

No. 426M&E.

Same as No. 426, except that the beam is graduated on one side in $\frac{1}{2}$ millimeters and on the other in 100ths of an inch.

M	4 in., with adjusting screw	\$4 50	O	Without	\$3 50
N	6 in., with adjusting screw	7 50	P	Without	5 50
	With hardened jaws, extra				1 50
	In Leatherette case, extra				75
	Sent with adjusting screw and without case unless otherwise ordered.				

Be sure to add page number to every item number, viz.: 1 only J-115.

Carborundum Stones

The Hardest and Sharpest

Used dry or with water or oil. Are quite porous, and may be tempered in their cutting by filling with wax or vaseline.

No.	Lgth Ins.	Width Ins.	Thick-ness Ins.	Number of Carborundum	Price per Stone
115	8	2	1	FF (fine)	\$1.00
116	8	2	1	180 (medium)	.80
117	8	2	1	120 (coarse)	.80
118	8	2	$\frac{3}{4}$	FF (fine)	.80
119	8	2	$\frac{3}{4}$	180 (medium)	.60
120	8	2	$\frac{3}{4}$	120 (coarse)	.60
121	6	2	1	FF (fine)	.80
122	6	2	1	180 (medium)	.60
123	6	2	1	120 (coarse)	.60
124	6	2	$\frac{5}{8}$	FF (fine)	.60
125	6	2	$\frac{5}{8}$	180 (medium)	.45
126	6	2	$\frac{5}{8}$	120 (coarse)	.45
127	6	$1\frac{1}{2}$	1	FF (fine)	.65
128	6	$1\frac{1}{2}$	1	180 (medium)	.50
129	6	$1\frac{1}{2}$	1	120 (coarse)	.50
130	6	$1\frac{1}{2}$	$\frac{1}{2}$	FF (fine)	.45
131	6	$1\frac{1}{2}$	$\frac{1}{2}$	180 (medium)	.35
132	6	$1\frac{1}{2}$	$\frac{1}{2}$	120 (coarse)	.35
139	4	$1\frac{1}{2}$	1	FF (fine)	.55
140	4	$1\frac{1}{2}$	1	180 (medium)	.40
141	4	$1\frac{1}{2}$	1	120 (coarse)	.40
142	4	$1\frac{1}{2}$	$\frac{5}{8}$	FF (fine)	.40
143	4	$1\frac{1}{2}$	$\frac{5}{8}$	180 (medium)	.30
144	4	$1\frac{1}{2}$	$\frac{5}{8}$	120 (coarse)	.30
145	4	1	$\frac{5}{8}$	FF (fine)	.25
146	4	1	$\frac{5}{8}$	180 (medium)	.20
147	4	1	$\frac{5}{8}$	120 (coarse)	.20



Round Edge Gouge Stones

No.	Lgth Ins.	Width Ins.	Thick-ness Ins.	Number of Carborundum	Price per Stone
160	8	2	$\frac{3}{4}$	FF (fine)	\$0.90
161	8	2	$\frac{3}{4}$	180 (medium)	.70
162	8	2	$\frac{3}{4}$	120 (coarse)	.70
163	5	$1\frac{1}{2}$	$\frac{1}{2}$	FF (fine)	.55
164	5	$1\frac{1}{2}$	$\frac{1}{2}$	180 (medium)	.45
165	5	$1\frac{1}{2}$	$\frac{1}{2}$	120 (coarse)	.45
166	4	$1\frac{1}{2}$	$\frac{1}{2}$	FF (fine)	.50
167	4	$1\frac{1}{2}$	$\frac{1}{2}$	180 (medium)	.40
168	4	$1\frac{1}{2}$	$\frac{1}{2}$	120 (coarse)	.40
169	4	1	$\frac{1}{2}$	FF (fine)	.35
170	4	1	$\frac{1}{2}$	180 (medium)	.30
171	4	1	$\frac{1}{2}$	120 (coarse)	.30

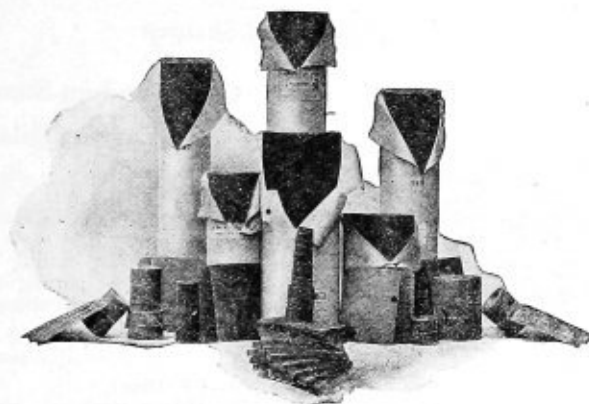


Slip Stones

No.	Lgth Ins.	Width Ins.	Thick-ness Ins.	Number of Carborundum	Price per Stone
174	6	2	$\frac{5}{8}$ -3-16	FF (fine)	\$0.70
175	6	2	$\frac{5}{8}$ -3-16	180 (medium)	.55
176	6	2	$\frac{5}{8}$ -3-16	120 (coarse)	.55
177	6	$1\frac{1}{2}$	$\frac{5}{8}$ -1-8	FF (coarse)	.65
178	6	$1\frac{1}{2}$	$\frac{5}{8}$ -1-8	180 (medium)	.50
179	6	$1\frac{1}{2}$	$\frac{5}{8}$ -1-8	120 (coarse)	.50
180	4	2	$\frac{5}{8}$ -3-16	FF (fine)	.50
181	4	2	$\frac{5}{8}$ -3-16	180 (medium)	.35
182	4	2	$\frac{5}{8}$ -3-16	120 (coarse)	.35
183	4	$1\frac{1}{2}$	$\frac{5}{8}$ -1-8	FF (fine)	.45
184	4	$1\frac{1}{2}$	$\frac{5}{8}$ -1-8	180 (medium)	.30
185	4	$1\frac{1}{2}$	$\frac{5}{8}$ -1-8	120 (coarse)	.30



Carborundum Paper and Cloth



Prices Carborundum Paper

Grit Numbers	480 Sheets to the Ream		Rolls
	9 x 11 Inch per Ream (Claim)	9 x 12 Inch per Ream (Clutch)	50 Yards Long 24 Inches Wide per Roll (Clux)
Nos. 220 to 60	\$6.50	\$7.00	\$ 7.00
Nos. 50 and 40	7.00	7.50	7.50
No. 36	7.75	8.50	8.50
No. 30	8.50	9.25	9.25
No. 24	9.50	10.25	10.25
No. 20	11.00	12.00	12.00

Prices Carborundum Cloth

480 Sheets to the Ream

$\frac{1}{4}$ ream package (Cluck); $\frac{1}{2}$ ream in packages (Clump); $\frac{3}{4}$ ream in packages (Clumasy); 1 ream package (Cluster).

Grit Numbers	Size Inches (Cluttery)	Price per Ream	Grit Numbers	Size Inches (Cluttery)	Price per Ream
Powder FFF . . .	9 x 11	\$26.50	1	9 x 11	\$28.50
Powder FF . . .		26.50	1½		29.75
Powder F . . .		26.50	2		30.75
000		26.50	2½		33.00
00		26.50	3		35.25
0		26.50	3½		37.50
½		26.50			

Carborundum Stones

The Hardest and Sharpest

Carborundum Stones for Carving Bits

The shape of this stone is designed specially for sharpening carving bits or knives, used on wood carving machines in furniture factories, chair factories, etc. The stone is made in two grits, coarse for fast cutting and removing material, and fine for putting a keen edge on the bit. This stone will sharpen quickly the very hardest of steel knives.

Price per Stone

No. 290—FF (fine) . . . \$0.60
No. 291—180 (coarse)40

Carvers' Slips

These slips are made in four different shapes and three grits of each shape; they are exceedingly hard, to retain the sharp knife edges. Although very hard they cut fast and produce a keen cutting edge on tools for engravers, chasers of metal, wood carvers and trades of like character.



Shape Nos.
80, 81, 82



Shape Nos.
83, 84, 85



Shape Nos.
86, 87, 88



Shape Nos.
89, 90, 91

Drawing half size

No.	Lgth Ins.	Width Ins.	Thick- ness Ins.	Number of Carborundum	Price per Stone
80	2 1/4	3/8	3-16	FF (fine)	\$0.35
81	2 1/4	1/2	3-16	F (med. fine)	.25
82	2 1/4	3/4	3-16	180 (medium)	.25
83	2 1/4	7/8	3-16	FF (fine)	.35
84	2 1/4	1	3-16	F (med. fine)	.25
85	2 1/4	1 1/8	3-16	180 (medium)	.25
86	2 1/4	1 1/4	3-16	FF (fine)	.35
87	2 1/4	1 1/2	3-16	F (med. fine)	.25
88	2 1/4	1 3/4	3-16	180 (medium)	.25
89	2 1/4	2	3-16	FF (fine)	.35
90	2 1/4	2 1/4	3-16	F (med. fine)	.25
91	2 1/4	2 3/4	1-16	180 (medium)	.25

Points

For Die Sinks.

Hard and Sharp

Three Inches Long.

Made in Three Grits.

Price per Point

No. 97—FF (fine) . . . \$0.75
No. 98—180 (medium)50
No. 99—120 (coarse)50

Carborundum Stones

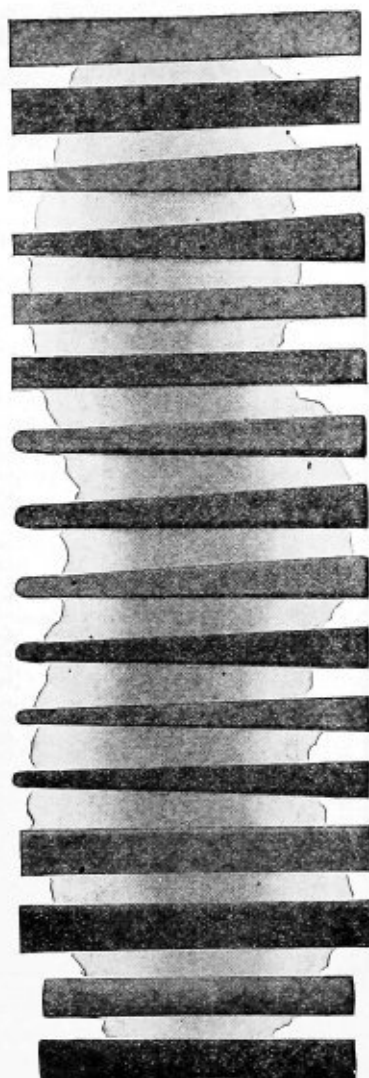
The Hardest and Sharpest

Silversmiths' Stones

Special Sizes and Shapes for Silversmiths, Watchmakers and General Die Work

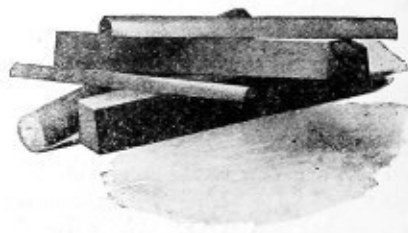
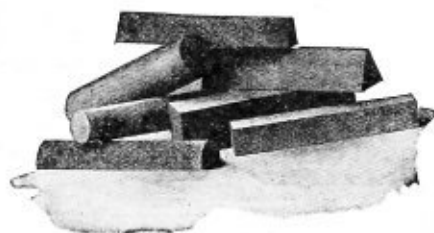
These stones are exceedingly hard, so that they retain their shape perfectly. Made in three grits of each size and shape. We recommend these stones without hesitation, to silversmiths, watchmakers and general die workers.

Size, 4 x $\frac{1}{2}$ x $\frac{1}{8}$ inch	Price per Stone
No. 300—FF (fine)	\$0.60
No. 301—220 (medium fine) . . . . .	.40
No. 302—150 (medium) . . . . .	.40
Size, 4 x $\frac{1}{2}$ - $\frac{1}{4}$ x $\frac{7}{32}$ - $\frac{5}{16}$ inch	
No. 303—FF (fine) . . . . .	.75
No. 304—220 (medium fine) . . . . .	.50
No. 305—150 (medium) . . . . .	.50
Size, 4 x $\frac{5}{16}$ x $\frac{3}{8}$ - $\frac{1}{16}$ inch	
No. 306—FF (fine) . . . . .	.75
No. 307—220 (medium fine) . . . . .	.50
No. 308—150 (medium) . . . . .	.50
Size 4 x $\frac{1}{2}$ - $\frac{3}{32}$ x $\frac{1}{4}$ - $\frac{1}{8}$ inch	
No. 309—FF (fine) . . . . .	.75
No. 310—220 (medium fine) . . . . .	.50
No. 311—150 (medium) . . . . .	.50
Size, 4 x $\frac{5}{16}$ - $\frac{3}{16}$ x $\frac{3}{16}$ - $\frac{1}{16}$ inch	
No. 312—FF (fine) . . . . .	.75
No. 313—220 (medium fine) . . . . .	.50
No. 314—150 (medium) . . . . .	.50
Size, 4 x $\frac{3}{8}$ - $\frac{1}{8}$ x $\frac{3}{16}$ - $\frac{1}{16}$ inch	
No. 315—FF (fine) . . . . .	.75
No. 316—220 (medium fine) . . . . .	.50
No. 317—150 (medium) . . . . .	.50
Size, 4 x $\frac{1}{2}$ x $\frac{3}{16}$ - $\frac{3}{32}$ inch	
No. 318—FF (fine) . . . . .	.45
No. 319—220 (medium fine) . . . . .	.30
No. 320—150 (medium) . . . . .	.30
Size, 3 $\frac{1}{2}$ x $\frac{5}{16}$ x $\frac{7}{32}$ inch	
No. 321—FF (fine) . . . . .	.75
No. 322—220 (medium) . . . . .	.50
No. 323—150 (medium) . . . . .	.50



Carborundum Sticks

The Hardest and Sharpest



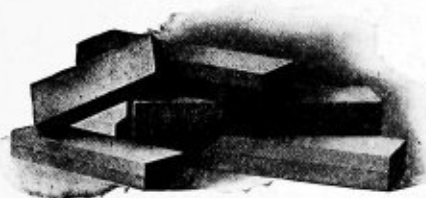
Price per Stick

Length			4 inches			6 inches			8 inches			10 inches			12 inches		
Symbol for Length and Grit			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
No.	Shape	Size Inches	Coarse	Med.	Fine	Coarse	Med.	Fine	Coarse	Med.	Fine	Coarse	Med.	Fine	Coarse	Med.	Fine
1	Sq.	3/4	\$0.25	\$0.35	\$0.40	\$0.50											
2	Tri.		.25	.35	.40	.50											
3	1/2 Rd.		.25	.35	.40	.50											
4	Rd.		.25	.35	.40	.50											
5	Sq.	3/8	.25	.35	.40	.50											
6	Tri.		.25	.35	.40	.50											
7	1/2 Rd.		.25	.35	.40	.50											
8	Rd.		.25	.35	.40	.50											
9	Sq.	1/2	.25	.35	.40	.50			\$0.55	\$0.75							
10	Tri.		.25	.35	.40	.50			.55	.75							
11	1/2 Rd.		.25	.35	.40	.50			.55	.75							
12	Rd.		.25	.35	.40	.50			.55	.75							
13	Sq.	5/8	.30	.40	.40	.55	.65	.85				\$0.85	\$1.15	\$1.05	\$1.40		
14	Tri.		.30	.40	.40	.55	.65	.85				.85	1.15	1.05	1.40		
15	1/2 Rd.		.30	.40	.40	.55	.65	.85				.85	1.15	1.05	1.40		
16	Rd.		.30	.40	.40	.55	.65	.85				.85	1.15	1.05	1.40		
17	Sq.	3/4	.35	.45	.45	.55	.65	.85				.80	1.10	.95	1.30		
18	Tri.		.35	.45	.45	.55	.65	.85				.80	1.10	.95	1.30		
19	1/2 Rd.		.35	.45	.45	.55	.65	.85				.80	1.10	.95	1.30		
20	Rd.		.35	.45	.45	.55	.65	.85				.80	1.10	.95	1.30		
21	Sq.	1	.35	.50	.45	.60	.70	.90				.80	1.05	.90	1.20		
22	Tri.		.35	.50	.45	.60	.70	.90				.80	1.05	.90	1.20		
23	1/2 Rd.		.35	.50	.45	.60	.70	.90				.80	1.05	.90	1.20		
24	Rd.		.35	.50	.45	.60	.70	.90				.80	1.05	.90	1.20		
25	Sq.	1 1/4	.40	.55	.55	.75	.75	.95				.95	1.25	1.15	1.55		
26	Tri.		.40	.55	.55	.75	.75	.95				.95	1.25	1.15	1.55		
27	1/2 Rd.		.40	.55	.55	.75	.75	.95				.95	1.25	1.15	1.55		
28	Rd.		.40	.55	.55	.75	.75	.95				.95	1.25	1.15	1.55		
29	Sq.	1 1/2	.55	.75	.75	.95	.85	1.15				1.20	1.60	1.55	2.10		
30	Tri.		.55	.75	.75	.95	.85	1.15				1.20	1.60	1.55	2.10		
31	1/2 Rd.		.50	.65	.60	.80	.75	1.00				1.00	1.35	1.35	1.70		
32	Rd.		.50	.65	.60	.80	.75	1.00				1.00	1.35	1.35	1.70		

Explanation—In ordering sticks, order them by stick number and the letter symbol for length and grit, viz., "12 No. 1 A sticks" means 12 square sticks 4 inches long, 1/4 in square, coarse grit.

Carborundum Stones

The Hardest and Sharpest



Combination Stones

Made in Five Sizes

These stones are designed especially for carpenters and mechanics.

They are made with one face of coarse and one face of very fine grit. The coarse side can be used for sharpening dull tools; the fine side for tools requiring a keen, sharp edge.

No. 108—8 x 2	x 1	inches, Price per Stone, \$1.25
No. 110—7 x 2	x 1	" " " 1.15
No. 109—6 x 2	x 1	" " " 1.00
No. 111—5 x 1½	x ¾	" " " .75
No. 112—4 x 1½	x ¾	" " " .50

Aluminum Boxes for Carborundum Oil Stones

These boxes are made of cast aluminum of a very neat and practical design, highly polished and exceedingly light in weight; made in three sizes:

No. 1, for Carborundum stones, 8 x 2	x 1 inches, per box, without stone, price,	\$1.50
No. 2, for Carborundum stones, 6 x 2	x 1 inches, per box, without stone, price,	1.25
No. 3, for Carborundum stones, 4 x 1½	x 1 inches, per box, without stone, price,	1.00

We recommend the following Carborundum stones for these boxes:

FOR NO. 1

	Price
No. 108, Combination stone, one side coarse, one side fine, per stone, without box,	\$1.25
No. 115, Carborundum stone, FF fine, per stone, without box,	1.00
No. 116, Carborundum stone, 180 medium, per stone, without box,	.80

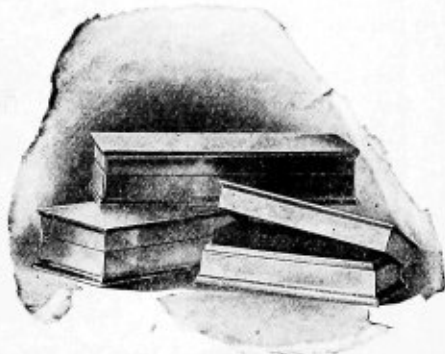
FOR NO. 2

Price

No. 109, combination stone, one side coarse, one side fine, per stone, without box,	\$1.00
No. 121, Carborundum stone, FF fine, per stone, without box,	.80
No. 122, Carborundum stone, 180 medium, per stone, without box,	.60

FOR NO. 3

No. 139, Carborundum stone, FF fine, per stone, without box,	.55
No. 140, Carborundum stone, 180 medium, per stone, without box,	.40

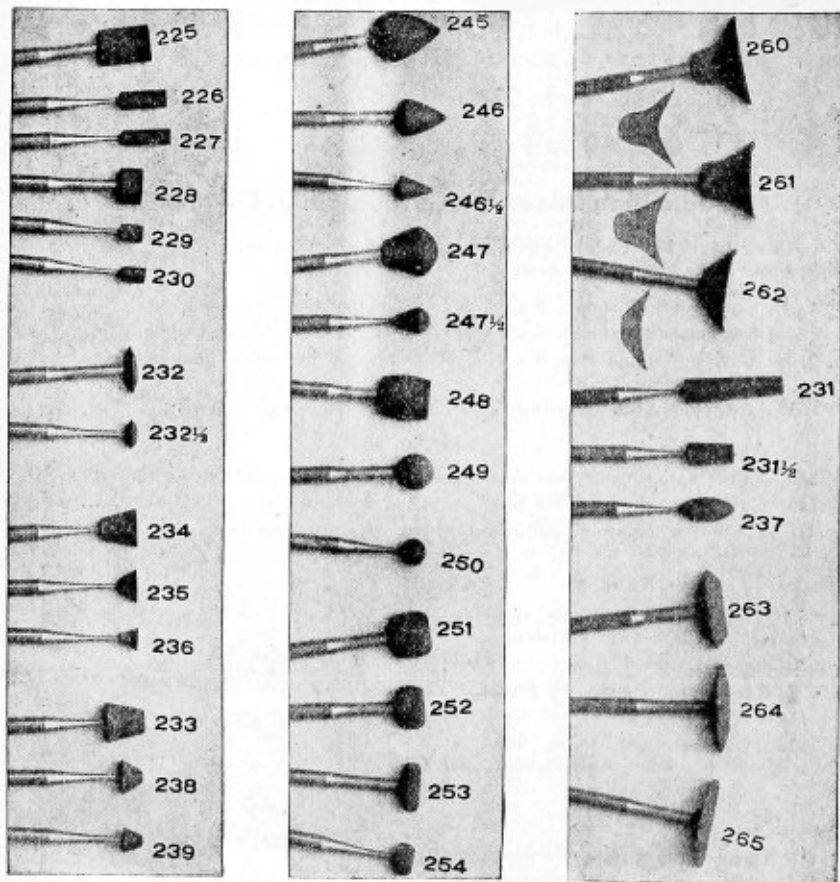


DIE-SINKERS' CARBORUNDUM POINTS.

For use with Die-Sinkers' Engine. These points will finish intricate parts and difficult places—much better—also in half the time than it is possible to do the work with Riffle Files. Illustrations of points are full size, excepting the arbors which are about $1\frac{5}{8}$ " long.

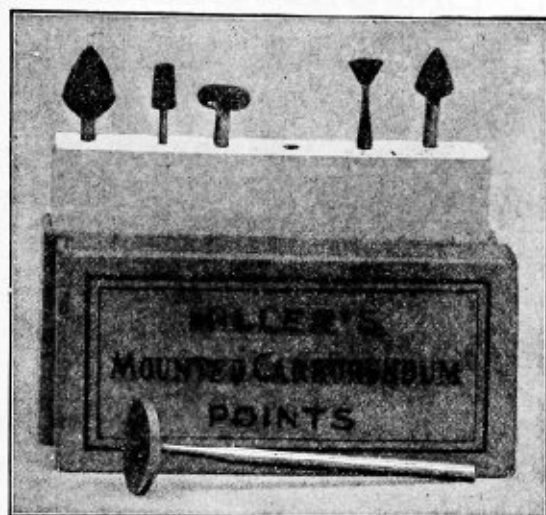
	Each.	Dozen.
All Styles Mounted on Steel Arbors	\$0 15	\$1 50

Grades—Coarse, Medium, Fine. Be sure to specify which to send.



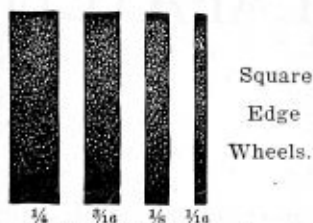
Order this way: 1 Doz. No. 245, medium-122. When you get your bill you will know exactly where to find the item billed.

DIE-SINKERS' CARBORUNDUM POINTS AND WHEELS.



Set of 6 Points—Mounted in Neat Box

75c per set.



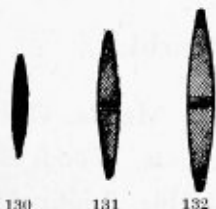
All sizes 8c each

All sizes 90c dozen

No.	Diam.	Thick.	Code Word.
100	1/2	1/8	Poise
101	1/2	1/8	Poison
102	1/2	1/8	Poke
103	1/2	1/4	Poking
104	5/8	1/8	Polar
105	5/8	1/8	Polarize
106	5/8	1/8	Pole
107	5/8	1/4	Polecat
108	3/4	1/8	Polemic
109	3/4	1/8	Polestar
110	3/4	3/16	Police
111	3/4	1/4	Poling
112	1	1/8	Polish
113	1	1/8	Polishing
114	1	3/16	Polite
115	1	1/4	Polliteness

KNIFE EDGE WHEELS.

Will cut rapidly, splendid for removing solder from spectacle grooves, grinding off pallet stones, jewels, etc.



All Sizes

8c each

90c dozen

- 130 Pollute
131 Poltroon
132 Polygamy

Round Edge
Wheels

All Sizes

8c each

90c dozen

No.	Diam.	Thick.	Code Word.
120	1/2	1/8	Political
121	1/2	3/16	Politician
122	3/4	1/8	Politics
123	3/4	1/8	Polka
124	1	1/8	Pollen
125	1	3/16	Polling

Steel Screw Arbor—for holding all wheels shown on this page, 15c each.

LAFAYETTE LIQUID CEMENT

Per Bottle, 15c

Per Dozen, \$1.25

This cement has been thoroughly tested and found to be the most convenient and practical cement on the market for cementing roller jewels, pallet stones, pearls, watch glass, etc.

It is practical on account of its strength, and most convenient because it requires no heat and dries rapidly when exposed to the air.

It is only necessary that you have the article perfectly clean before cementing, and keep the cork in the bottle when not in use.

We have placed a low price on this cement, but there is no better on the market at any price, *as a trial will convince.*

Order through your jobber and ask for "Lafayette."

Van Stan's Stra-te-na Cement

The Best Mender in the World.

For Aluminum, Electrical, Jewelry, Light Metals, Optical, Phonograph, Graphophone, Pearl and Bone Goods, Wood, Glass, China, Terra-Cotta, Meerscham, Amber, Marble, Light Metal Work, Inlaid Work, Porcelain, Linoleum, Rubber, Ivory, Jet, Coral, etc.

1 Dozen Small Bottles, \$1.50

Lafayette Charcoal Blocks

Are Chemically Prepared



They possess every essential feature required of a soldering block, viz:—

They are dense and tough, yet not brittle.

Will not burn to ashes.

Sparks will not fly from same.

Retain the heat perfectly

They puncture easily, yet hold the work firmly.

Small size	3 $\frac{1}{4}$ "x2 $\frac{1}{4}$ "	Dozen..\$1 50	Each....\$0 15
Medium size	4 $\frac{1}{4}$ "x3"	Dozen.. 3 00	Each.... 30
Large size	6 $\frac{3}{4}$ "x2 $\frac{1}{2}$ "	Dozen.. 3 50	Each.... 35
Extra large size.....	7" x4"	Dozen.. 4 50	Each.... 40

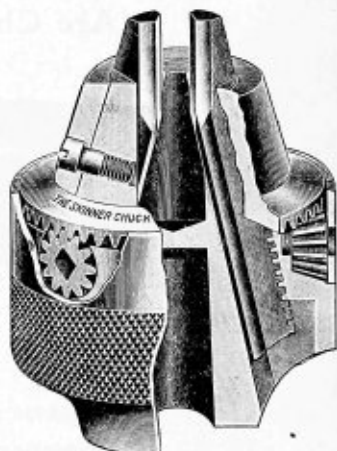
Polishing Charcoal

For Half Tone Engravers Use

This will not Scratch. Used with Oil or Water. In Sticks 6" long by 1" square, 12 Sticks to the lb., \$3 00 per lb.

GEARED DRILL CHUCKS.

Every Chuck Guaranteed as to Accuracy.



"SKINNER."

No.	Capacity.	Each.	Code Word.
22	0 to $\frac{3}{8}$ "	\$ 6 00	Baker
23	0 to $\frac{1}{2}$ "	10 00	Carter

Geared chucks are operated the same as the well-known, original style (not geared) but by using the key a much stronger grip of the drill can be had.



ALMOND.

No.	Each.	Capacity.
1 IP	\$ 6 00	0 to $\frac{3}{16}$ "
2 IP	6 00	0 to $\frac{1}{8}$ "
3 IP	10 00	0 to $\frac{1}{2}$ "

"JACOBS" CHUCKS."

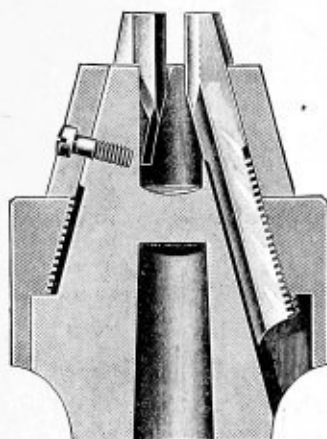
Gears Are Not Incased.

No.	Each.	Capacity.
1 J	\$ 6 00	0 to $\frac{3}{16}$ "
2 J	6 00	0 to $\frac{1}{8}$ "
3 J	10 00	0 to $\frac{1}{2}$ "

Write your orders by our system and you will appreciate its value when you come to check your invoices.

STANDARD DRILL CHUCKS.

Every Chuck Guaranteed as to Accuracy.



"SKINNER."

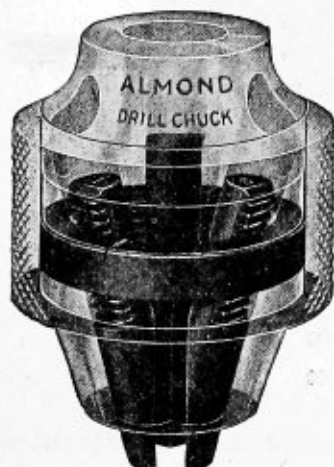
No. CAPACITY
11 0 to $\frac{3}{32}$ "
Each \$5 50
Code Word
Many.

No. CAPACITY
12 0 to $\frac{1}{16}$ "
Each \$5 50
Code Word
More.



"SKINNER."

No. CAPACITY
13 0 to $\frac{1}{8}$ "
Each \$9 00
Code Word
Most.

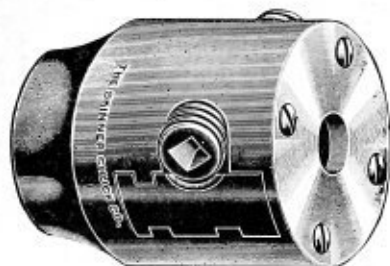


ORIGINAL ALMOND.

1	\$5 50	0 to $\frac{3}{16}$ "
2	5 50	0 to $\frac{5}{16}$ "
3	9 00	0 to $\frac{1}{2}$ "

Every item on each page has its own name or number—therefore, by affixing the page numbers to each item, error is avoided.

SKINNER DRILL CHUCKS.

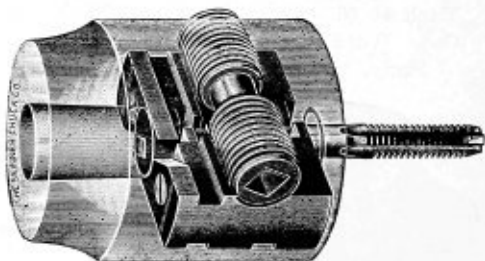


"STANDARD"
PATTERN.

Number.	Price. Each.	Capacity. Inches.	Diameter. Inches.	Length. Inches.	Code Word.
000	\$ 6 00	0 to $\frac{1}{4}$	$1\frac{3}{8}$	$2\frac{3}{4}$	Obey
00	6 50	0 to $\frac{3}{8}$	$1\frac{1}{2}$	$2\frac{1}{2}$	Oblige
100	7 00	0 to $\frac{1}{2}$	$2\frac{3}{8}$	$2\frac{1}{8}$	Object
101	8 00	0 to $\frac{3}{4}$	$2\frac{7}{8}$	$3\frac{3}{8}$	Octave
102	10 00	0 to 1	$3\frac{7}{16}$	$4\frac{1}{4}$	Option

"POSITIVE DRIVE" PATTERN.

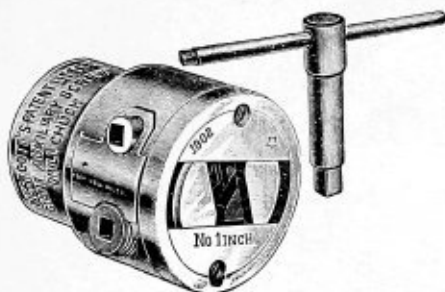
"PATENTED."



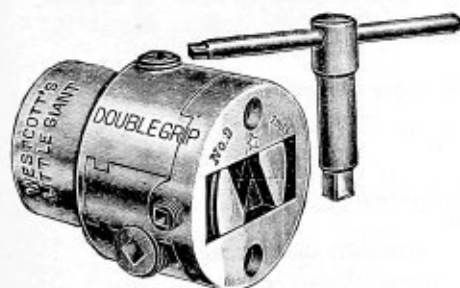
Numbers.	Holding Capacity.	Price.	Code Word.
50	0 to $\frac{3}{8}$ "	\$ 7 00	Flower
51	0 to $\frac{1}{2}$ "	8 00	Friend
52	0 to $\frac{3}{4}$ "	9 00	Fever
53	0 to 1"	10 00	Felon

Always affix the page number to the item ordered, thus: 1 No. 52-128, or 1 No. 100-128. By so doing you cannot err, also you will know exactly where to find the item or items charged on your bill.

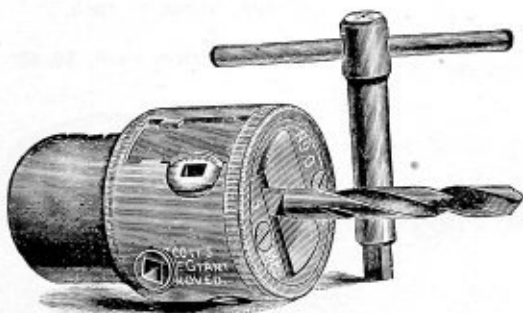
WESTCOTT'S DRILL CHUCKS.



SIZE No.	CAPACITY	PRICE
D	0 to $\frac{1}{2}$ "	\$ 8 00
E	0 to $\frac{3}{4}$ "	9 00
G	0 to 1"	10 00



No.	CAPACITY	PRICE
0 A	0 to $\frac{1}{2}$ "	\$ 8 00
1 B	0 to $\frac{3}{4}$ "	9 00
2 C	0 to 1"	10 00



No.	APPROXIMATE DIAMETER	CAPACITY	PRICE
00	$1\frac{1}{16}$ "	0 to $\frac{1}{4}$ "	\$ 7 00
0	$2\frac{1}{2}$ "	0 to $\frac{1}{2}$ "	8 00
1	3"	0 to $\frac{3}{4}$ "	9 00
2	$3\frac{1}{2}$ "	0 to 1"	10 00

Every item has its own number. Write your orders thus: 1 only $\frac{3}{4}$ "-129, or 1 only 1B-129. This method saves much valuable time.

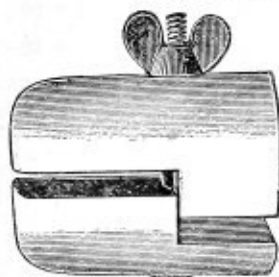
CHUCKS.



These Chucks are made of Select Dogwood.

Number,	1	2	3	4	5	6	7	8	9	10
Lengths,	2½"	2½"	2½"	2½"	3"	3"	3"	3½"	3¾"	6"
Diam.,	1½"	1¾"	2"	2¼"	2½"	2¾"	3"	3"	3"	2⅞" to 3"
Per 100,	\$3 75	\$4 00	\$4 25	\$4 50	4 75	\$5 00	\$5 50	\$6 00	\$7 00	\$14 00
Each,	05	05	06	06	06	07	08	08	09	16

Boxwood Chucks made to order. Special prices.



No. 13.

This illustration represents a Chuck made of select wood.

Diameter (closed), about 2 inches.

Length, about 3 inches.

Jaws, open, about ½ inch.

Price, each, \$0 30

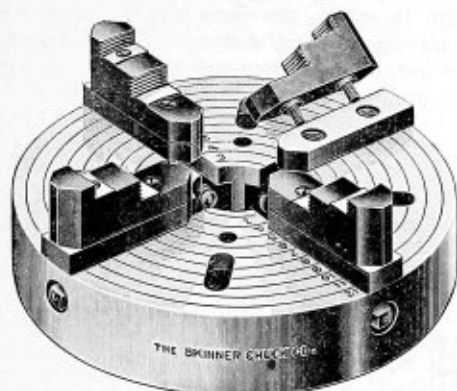


		Straight Shanks ½ inch or 41-64 inch	Morse Taper No. 1 or No. 2
No. 14	to ⅝ inch, each.....	(Sane) \$1 50	\$2 00
No. 15	to ¼ inch, each.....	(Sale) 2 00	2 50
No. 15½	to ⅜ inch, each.....	(Sear) 3 00	3 50
No. 16	to ½ inch, each.....	(Scar) 4 00	4 50

Half-inch Shanks sent unless otherwise specified.

Note—If Morse Taper Shanks are wanted, be sure to specify every detail.

"SKINNER" INDEPENDENT LATHE CHUCKS.



"1908 PATTERN."

Patent Reversible Jaws.

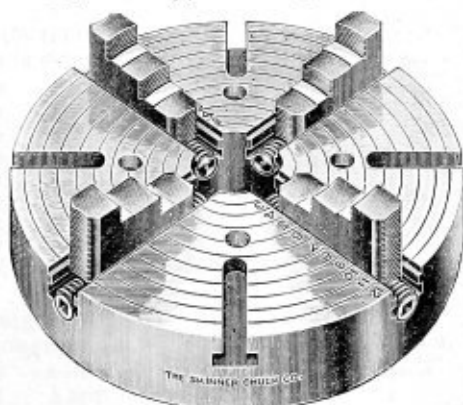
Jaws Have Full Threaded Nut.

Screw Heads "Flush."

Order by these Numbers	Rated Size of Chuck Inches	Capacity in Inches	Diameter of Chuck Body Inches	Diameter of Hole through Center Inches	Diameter of Recess for Face Plate Inches	Code Word	Price
104 J	4	4 3/4	5 3/8	1 1/8	2 3/4	Saw	\$14 00
106 J	6	8	7 3/8	1 5/8	4	Sap	18 00
108 J	8	9 1/4	8 7/8	1 7/8	4	Sin	22 00
110 J	10	10 3/4	11	2 1/8	4 3/4	Sir	26 00
112 J	12	13 1/2	12 7/8	2 5/8	6	Sod	30 00
114 J	14	15 1/4	15	2 7/8	7	Sun	34 00
116 J	16	18 1/4	17	3 1/8	7 3/4	Sage	38 00

"1904 Pattern."

Order by these Numbers	Rated Size of Chuck Inches	Price	Code Word
904	4 1/2	\$14 00	Abandon
906	6	18 00	Abbott
908	8	22 00	Abduce
909	9	24 00	Abhor
910	10	26 00	Abject
912	12	30 00	Ablegate
914	14	34 00	Abnet
915	15	36 00	Abolish
916	16	38 00	Abrupt

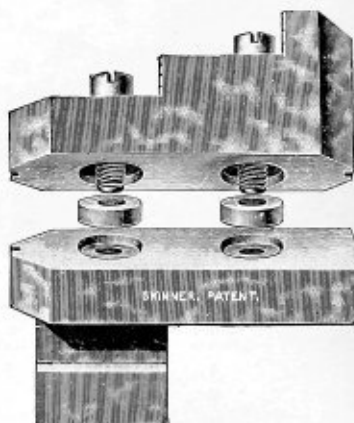
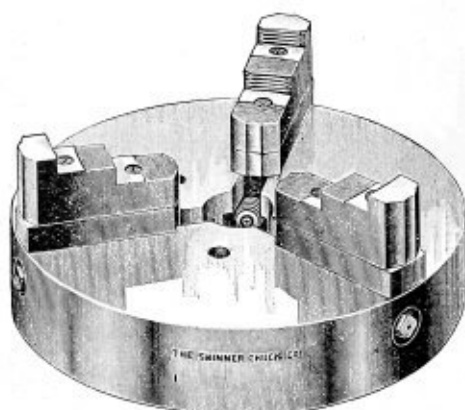


Note—We have tried to overcome the many vexatious errors which have in the past been most annoying to our customers. Our New System of writing orders fills this need, viz.:

Express today 1 No. 108 J-131. We know exactly what you want and you will know the page to find the list when you check your bill.

SKINNER COMBINATION LATHE CHUCK.

A Combination Lathe Chuck is one in which the jaws can be operated independently or universally (that is, all together) as desired. The change is made by throwing the rack gear in or out of mesh with the pinion gears. It may be used universally concentric or eccentric.



"Flush Screw Pattern" Chuck, Style J, with Reversible Jaws.

Patent Reversible Jaw, Style J.

Style "J" Jaws can be furnished with either the Combination or Universal Chuck.

(Geared Screw)

Rated Size of Chuck, Inches.	Diameter of Chuck Body, Inches.
3	4 $\frac{3}{8}$
4	5 $\frac{1}{2}$
5	7
6	8
8	9 $\frac{1}{4}$
9	10 $\frac{3}{8}$
12	13 $\frac{1}{2}$
15	16 $\frac{1}{4}$

WITH THREE JAWS.			
USE THESE NUMBERS IN ORDERING.			
Price.	Style A	Style B	Style J
\$18 00	603 A	603 B	603 J
22 00	604 A	604 B	604 J
25 00	605 A	605 B	605 J
26 00	606 A	606 B	606 J
30 00	608 A	608 B	608 J
34 00	609 A	609 B	609 J
44 00	612 A	612 B	612 J
52 00	615 A	615 B	615 J

Order by respective numbers and avoid error.

(Geared Screw)

Rated Size of Chuck, Inches.	Diameter of Chuck Body, Inches.
4	5 $\frac{1}{2}$
5	7
6	8
8	9 $\frac{1}{4}$
9	10 $\frac{3}{8}$
12	13 $\frac{1}{2}$

WITH FOUR JAWS.			
USE THESE NUMBERS IN ORDERING.			
Price.	Style A	Style B	Style J
\$26 00	804 A	804 B	804 J
30 00	805 A	805 B	805 J
32 00	806 A	806 B	806 J
38 00	808 A	808 B	808 J
42 00	809 A	809 B	809 J
56 00	812 A	812 B	812 J

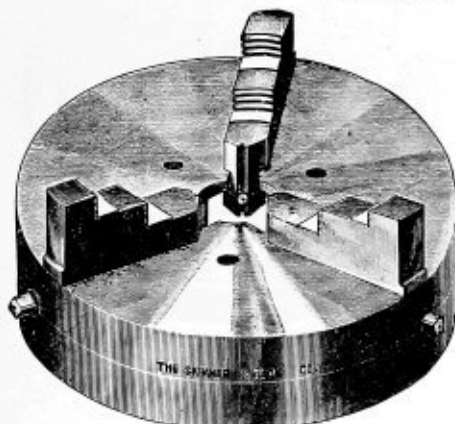
Order by respective numbers and avoid error.

Write your orders thus: 1 only 605 B-132, or 1 No. 808 J-132.

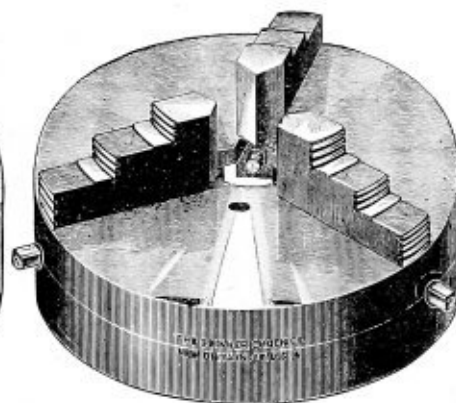
SKINNER UNIVERSAL LATHE CHUCK.

A Universal Lathe Chuck is one in which all the jaws are operated at once, moving to and from the center together and having a common center at all times.

Jaws are not reversible.



"Style A" Jaws,
With Inside Bite.



"Style B" Jaws,
Outside Bite.

(Geared Screw)

WITH THREE JAWS.

Rated Size of Chuck. Inches.	Diameter of Chuck Body. Inches.
3	4 $\frac{3}{8}$
4	5 $\frac{1}{2}$
5	7
6	8
8	9 $\frac{1}{4}$
9	10 $\frac{3}{8}$
12	13 $\frac{1}{2}$
15	16 $\frac{1}{4}$

Price.	USE THESE NUMBERS IN ORDERING.		
	Style A	Style B	Style J
\$18 00	303 A	303 B	303 J
22 00	304 A	304 B	304 J
25 00	305 A	305 B	305 J
26 00	306 A	306 B	306 J
30 00	308 A	308 B	308 J
34 00	309 A	309 B	309 J
44 00	312 A	312 B	312 J
52 00	315 A	315 B	315 J

Order by respective
numbers and avoid
error.

(Geared Screw)

WITH FOUR JAWS.

Rated Size of Chuck. Inches.	Diameter of Chuck Body. Inches.
4	5 $\frac{1}{2}$
5	7
6	8
8	9 $\frac{1}{4}$
9	10 $\frac{3}{8}$
12	13 $\frac{1}{2}$

Price.	USE THESE NUMBERS IN ORDERING.		
	Style A	Style B	Style J
\$26 00	404 A	404 B	404 J
30 00	405 A	405 B	405 J
32 00	406 A	406 B	406 J
38 00	408 A	408 B	408 J
42 00	409 A	409 B	409 J
56 00	412 A	412 B	412 J

Order by respective
numbers and avoid
error.

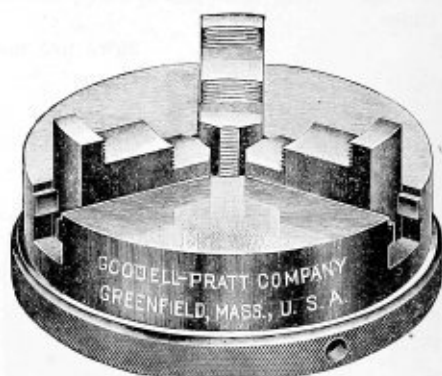
Always affix the page number to each item, thus: 1 only 405 A-133.

LEVER SCROLL CHUCKS.



No. 180½

Showing Inside Jaws.



No. 182

Showing Outside Jaws.

Tools of this character are too well known to require detailed description.

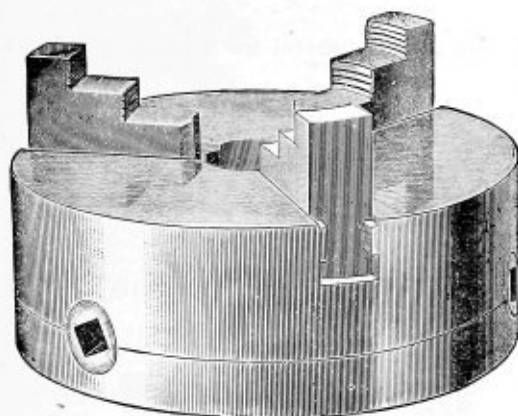
The Jaws are hardened, other steel parts are polished bright. No Face Plates are furnished. Jaws are not interchangeable, each set being fitted to its own Chuck.

		Each
No. 180	2 inches in diameter, outside jaws only	(Babble) \$5 00
No. 180½	2 inches in diameter, both outside and inside jaws..	(Baboon) 6 50
No. 181	3 inches in diameter, outside jaws only	(Badger) 6 00
No. 181½	3 inches in diameter, both outside and inside jaws..	(Baffle) 7 50
No. 182	4 inches in diameter, outside jaws only	(Bailiff) 7 00
No. 182½	4 inches in diameter, both outside and inside jaws..	(Balance) 9 00

Each Chuck packed in a box.

Do not forget when ordering to affix the page number to each item ordered. The real value of doing so will be much appreciated when you try to check your invoice, viz.: 1 only 182-134.

UNIVERSAL GEARED SCROLL CHUCKS.



COMMON JAWS.

Style No. 1.

(Not Reversible.)

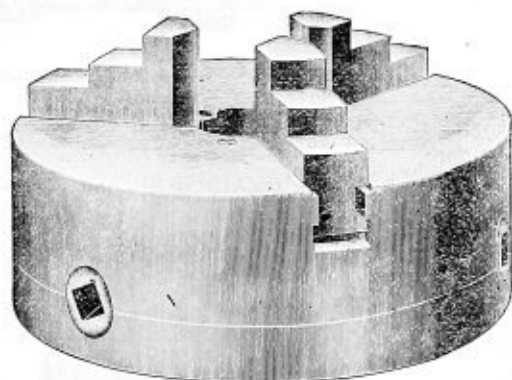
Order by respective number in list below and avoid error.

REVERSE JAWS.

Style No. 2.

(Not Reversible.)

Order by respective number in list below and avoid error.

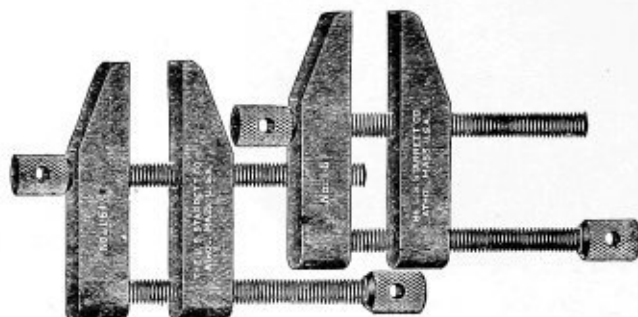


Nominal Size. Inches.	Diameter of Hole. Inches.	Diam. of Recess for Flange. Inches.	THREE-JAW.		FOUR-JAW.	
			Style 31 No. 1 Jaws. 32 No. 2 Jaws.	Price. Style 34. 2 Sets Jaws.	Style 41 No. 1 Jaws. 42 No. 2 Jaws.	Price. Style 44. 2 Sets Jaws.
2	1/2	1 1/2	\$ 7 00	\$ 8 50		
2 1/2	5/8	1 7/8	8 00	9 50		
3	5/8	2 7/8	10 00	12 00	\$10 75	\$13 35
4	1	3 1/8	12 00	14 40	13 00	16 20
5	1 1/4	3 3/4	15 00	18 00	16 20	20 20
6	1 5/8	4 3/4	18 00	21 60	19 50	24 30
7 1/2	2	4 3/4	21 00	25 20	22 25	28 40

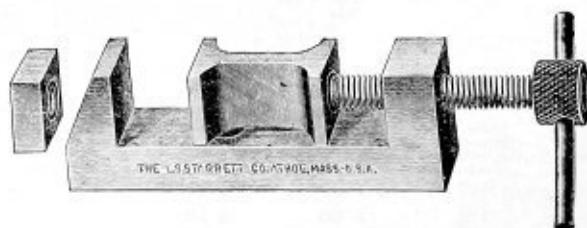
1 only 3" No. 41-135 tells us at once that you want Chuck on page 135. The style number is 41. The size is 3". We cannot err when orders are so written.

TOOL MAKERS' PARALLEL CLAMPS.

Made of steel, case hardened, and are very useful for holding small work together, in tapping, drilling, etc.



	Opening of Jaws.	Length of Jaw.	Per Pair (2 Clamps.)
No. 161 A	1 $\frac{1}{4}$ "	2"	\$1 25
No. 161 B	1 $\frac{3}{4}$ "	2 $\frac{1}{2}$ "	1 50
No. 161 C	2 $\frac{1}{4}$ "	3"	1 75
No. 161 D	2 $\frac{3}{4}$ "	4"	2 00

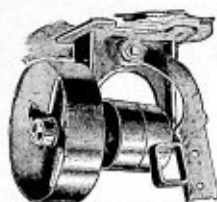


These clamps are made from drop forgings, nicely finished, case hardened, and have take-up blocks to slip on and off end of screw.

Clamp opening 1 inch (per pair) \$1 00

Clamp opening 2 inch (per pair) 1 25

COUNTERSHAFTS.



No. 1 (Harl) \$4 00

Drop, 6".

Tight and loose pulleys, 4" diameter for $1\frac{3}{8}$ " belt.Driving pulley, 8" diameter for $1\frac{7}{8}$ " belt.

Net weight, 17 lbs.

Gross weight, Domestic Shipment, about 23 lbs.

Either Style \$7 00

"A" With 10"x2" flat pulley (Hersey).

"B" With 12"x2" flat pulley (Heretic).

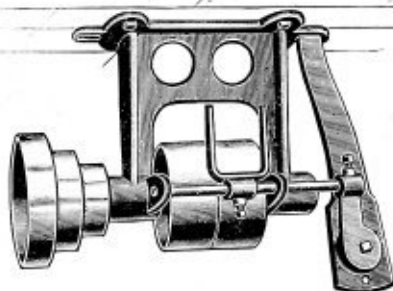
"C" With Cone Pulley (Hask).

Drop—8".

Tight and loose pulleys, 5" diam.
for $1\frac{7}{8}$ " belt.

Net Weight—35 lbs.

Gross Weight — Domestic Ship-
ment, about 45 lbs.



Either Style \$8 00

"D" With 10x2" flat pulley (Hastive).

"E" With 12x2" flat pulley (Heron).

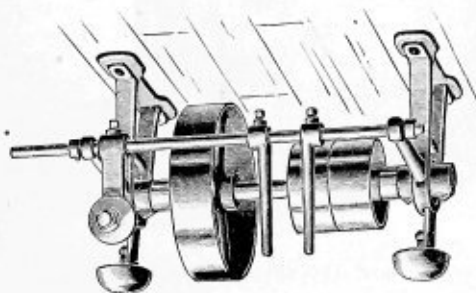
"G" With Cone pulley (Hoiden).

Drop, 7".

Tight and loose pulleys, 5" diam-
eter for $1\frac{7}{8}$ " belt.

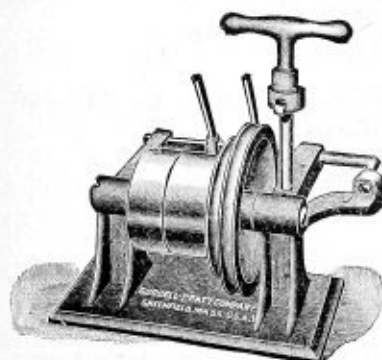
Net weight, 42 lbs.

Gross weight, Domestic Shipment,
about 52 lbs.



Each item has its own designating number. **But Be Sure** to affix the page number also.

COUNTERSHAFTS.



No. 1.

	Diameter
Shaft	$\frac{1}{2}$ inch
Loose Pulley	3 inch
Tight Pulley	3 inch
1st Step	$3\frac{1}{2}$ inch
2d Step	$4\frac{1}{2}$ inch
Base Plate, 4 inches by 8 inches.	
Price, each	(Pansy) \$2 50

Each Countershaft packed in a box, $10\frac{1}{4} \times 7\frac{1}{2}$ inches.
Weight, $11\frac{1}{2}$ pounds.

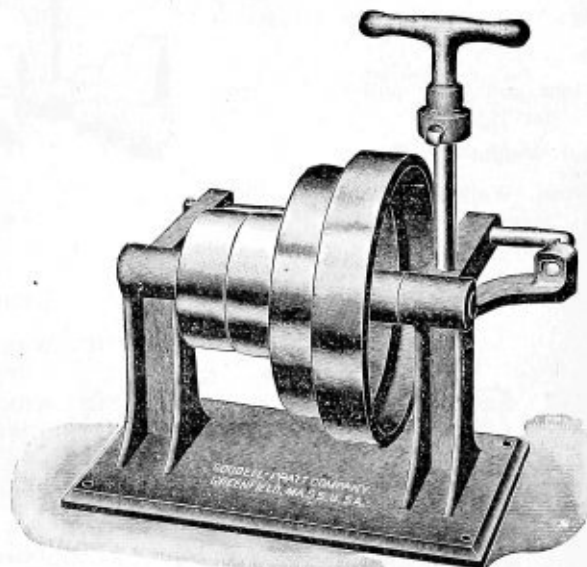
No. 2.

	Diameter
Shaft	$\frac{1}{2}$ inch
Loose Pulley....	3 inch
Tight Pulley....	3 inch
1st Step	3 inch
2d Step	5 inch
3d Step	6 inch

Width Loose Pulley,
1 inch.

Base Plate, 5 inches
by 9 inches.

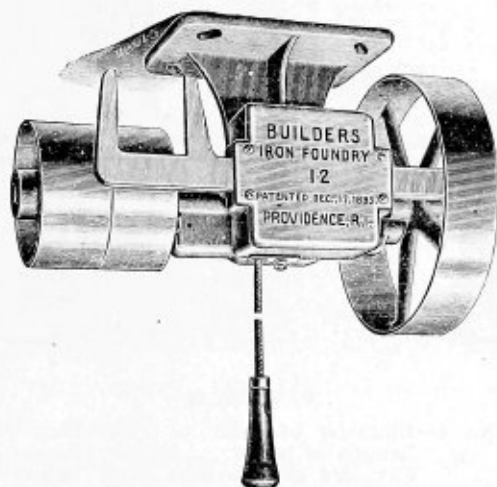
Price, each.....\$4 00
(Panel)



Each Countershaft packed in a wooden box, $11\frac{1}{2} \times 9\frac{1}{2} \times 9$ inches.
Weight, 18 pounds.

Our system of writing orders is the Best, **because** it tells us exactly on what page to find the item ordered, and it tells you the page also when you have your bill to check off.

PATENT COUNTERSHAFTS.



These Countershafts have self-oiling loose pulleys and self-oiling bearings. The oil reservoirs are so constructed that with one filling, the Countershaft will run for a long time without attention.

Dimensions.

8-inch Countershaft.
\$7 50.
Used with any machine running $1\frac{1}{2}$ " belts.

Tight and Loose pulleys, $4 \times 1\frac{3}{4}$ ".
Driving pulley, $8 \times 1\frac{3}{4}$ ".
Drop of hanger, 5".
Diameter of shaft, $\frac{7}{8}$ ".
Weight, ready for shipment, about 45 lbs.

Dimensions.

10-inch Countershaft.
\$9 50.
Used with any machine running 2" belts.

Tight and Loose pulleys, $5 \times 2\frac{1}{4}$ ".
Driving pulley, $10 \times 2\frac{1}{4}$ ".
Drop of hanger, 6".
Diameter of shaft, $\frac{7}{8}$ ".
Weight, ready for shipment, about 55 lbs.

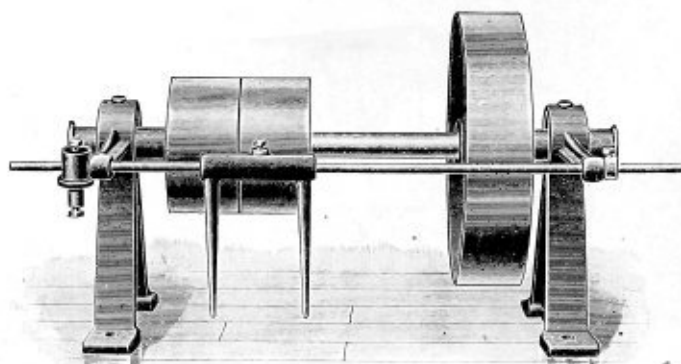
Dimensions.

12-inch Countershaft.
\$11 50.
Used with any machine running $2\frac{1}{2}$ " belts.

Tight and Loose pulleys, $6 \times 2\frac{3}{4}$ ".
Driving pulleys, $12 \times 2\frac{3}{4}$ ".
Drop of hanger, 7".
Diameter of shaft, $1\frac{1}{8}$ ".
Weight, ready for shipment, about 85 lbs.

Write your orders by our new system. It's very simple and a time saver.

COUNTER SHAFTS.



No. 1 \$5 00

No. 1—Diameter of shaft....	$\frac{7}{8}$	inch
Length of shaft.....	18	inches
Fast and loose pulleys	4x1 $\frac{3}{4}$	inches
Drive pulley.....	8x1 $\frac{7}{8}$	inches
Drop of hangers.....	5	inches
Weight	25	pounds

No. 2 \$7 50

No. 2—Diameter of shaft....	1	inch
Length of shaft.....	20	inches
Fast and loose pulleys	5x2 $\frac{1}{4}$	inches
Drive Pulley.....	10x2 $\frac{1}{4}$	inches
Drop of hangers.....	6	inches
Weight	36	pounds

No. 3 \$10 00

No. 3—Diameter of shaft....	1 $\frac{1}{8}$	inches
Length of shaft.....	24	inches
Fast and loose pulleys	6x3	inches
Drive pulley.....	12x3	inches
Drop of hangers.....	7 $\frac{1}{2}$	inches
Weight	50	pounds

No. 4 \$15 00

No. 4—Diameter of shaft....	1 $\frac{1}{4}$	inches
Length of shaft.....	30	inches
Fast and loose pulleys	6x4 $\frac{1}{2}$	inches
Drive pulley.....	16x4	inches
Drop of hangers.....	9	inches
Weight	85	pounds

The No. 4 has vertical adjustment for boxes and babbitted bearings.

Note.—Always affix the page number to the item number and you will be sure to get the right article.

Just the crucible for the jeweler who has no furnace. Use with blowpipe.

BURNO CRUCIBLES



No furnace necessary, melt with a blowpipe. Can be used 75 to 100 times. Gold melted in shorter time and with less gas than by any other process.

DIRECTIONS FOR USING BURNO CRUCIBLE

1. Place the cover on the crucible and hold both between spring tongs.
2. Melt a small amount of lump borax, two or three times, in crucible to secure first glazing; the crucible is then ready for use.
3. Keep the front edge of crucible and the melted metal at the same temperature. This will prevent the metal, when poured, from sticking to the edge of the crucible. Should the glazing, after many meltings, become too thick, hold the crucible in a pouring position, in a full blast of heat. The extra glazing will then melt and run out. If any metal is left to cool in the crucible, NEVER attempt to remove it when cold, but first melt the metal and then pour it out.
4. When melting gold use pulverized borax.

PRICES ON "BURNO" CRUCIBLES

- No. 1, holding 100 dwt., 65 cents each.
 No. 2, holding 50 dwt., 40 cents each.
 No. 3, holding 25 dwt., 25 cents each.
 Tongs for holding crucibles, 10 cents each.

(The same tongs will hold either of the crucibles.)

OUR NEW SYSTEM of ordering tells you at once on which page to find the item or items billed—it also avoids error and saves time. Use it.

TRIANGULAR HESSIAN SAND CRUCIBLES.



		Threes.	Small 5s.	Large 5s.	Sizes.	Eighths.
No. of Crucibles to nest		3	4	5	5	6
Cask holds about		2340	1400	675	300	180
Barrel holds about		500	300	140	70	40
Nested Sizes.		Price per 100	Price per 100	Price per 100	Price per 100	Price per 100
Nests "Full Sets"		\$2 75	\$4 00	\$7 75	\$15 50	\$28 00
Nests inside		1 25	2 25	3 75	7 00	14 00
No. 1, 2, of		2 75	3 75	7 50	14 00	24 00
No. 1, 2, 3, of		2 75	4 00	7 75	15 00	26 50
No. 2, 3, of		1 25	2 25	3 75	6 50	12 00
No. 2, 3, 4, of		....	2 25	3 75	7 00	13 50
No. 2, 3, 4, 5, of		....	....	3 75	7 00	14 00
No. 3, 4, of		....	1 25	2 00	3 50	6 50
No. 3, 4, 5, of		....	....	2 00	3 50	6 75
No. 4, 5, of		....	....	1 25	1 75	3 25
Single Sizes.						
No. 1, of		2 50	3 00	6 00	10 50	17 00
No. 2, of		1 25	2 00	3 00	5 00	9 00
No. 3, of		50	1 00	1 75	2 75	4 50
No. 4, of		....	50	1 00	1 50	2 50
No. 5, of		....	....	50	75	1 50
Covers.						
For No. 1, of		2 00	3 00	5 00	6 00	7 00

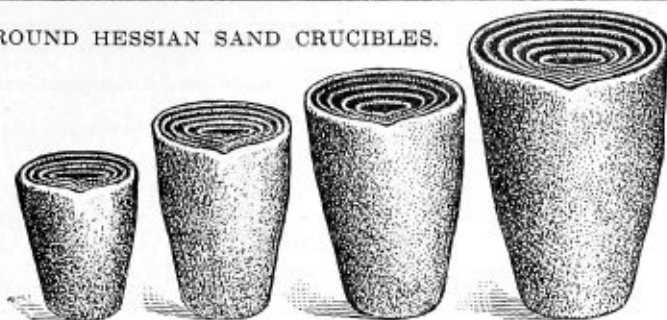
APPROXIMATE DIMENSIONS OF EACH SIZE CRUCIBLE.

Single Sizes.		Threes.	Small 5s.	Large 5s.	Sizes.	Eighths.
No. 1, of		3 1/4 x 2 1/4	4 x 3	4 1/2 x 3 3/4	5 7/8 x 4 3/4	7 x 5 3/4
No. 2, of		2 x 1 5/8	3 1/8 x 2 1/4	3 3/4 x 2 3/4	4 3/4 x 3 3/4	5 1/2 x 4 1/4
No. 3, of		1 3/4 x 1 1/8	2 1/4 x 1 1/2	3 x 2 1/8	3 3/4 x 2 7/8	4 1/4 x 3 3/8
No. 4, of		....	1 3/4 x 1 1/4	2 1/4 x 1 5/8	2 7/8 x 2 1/4	3 1/4 x 2 5/8
No. 5, of		....	....	1 3/4 x 1 1/4	2 1/8 x 1 1/2	2 1/2 x 2
Approximate Diam. of						
Covers.		2 3/4	3 1/4	4	5	6

We furnish crucibles in **Complete Nests**, single sizes or any combination of sizes desired.

We carry the largest stock of crucibles to be found in America.

ROUND HESSIAN SAND CRUCIBLES.



		Sizes.	Eighths.	Halves.	Ones.	Double Extras
No. of Crucibles to nest		4	5	5	6	6
Cask holds about		325	180	125	60	35
Barrel holds about		70	40	24	12	6
Nested Sizes		Price Per 100	Price Per 100	Price Per 100	Price Per 100	Price Per 100
Nests "Full Sets"		\$16 00	\$28 00	\$42 00	\$85 00	\$165 00
Nests inside		8 00	14 50	20 00	41 50	.....
No. 1, 2, of		14 50	25 00	36 00	72 50	.....
No. 1, 2, 3, of		15 50	27 00	39 00	77 50	.....
No. 2, 3, of		7 50	13 00	18 00	36 00	.....
No. 2, 3, 4, of		8 00	14 00	20 00	39 00	.....
No. 2, 3, 4, 5, of		....	14 50	20 00	41 50	.....
No. 3, 4, of		3 75	7 00	9 00	18 00	.....
No. 3, 4, 5, of		....	7 50	9 50	20 00	.....
No. 4, 5, of		....	3 50	5 00	9 00	.....
Single Sizes						
No. 1, of		11 00	17 00	27 00	53 00	120 00
No. 2, of		5 50	9 50	13 00	27 00	.....
No. 3, of		3 00	5 00	6 50	13 00	.....
No. 4, of		1 75	2 75	3 50	6 50	.....
No. 5, of		....	1 50	2 00	3 50	.....
Covers						
For No. 1, of		6 00	7 00	10 00	12 00	15 00
For No. 2, of		....	5 50	6 00	.....	.....
For No. 3, of		....	4 00	4 50	.....	.....
For No. 4, of		....	2 50	3 00	.....	.....
For No. 5, of		....	1 50	2 00	.....	.....

APPROXIMATE DIMENSIONS OF EACH SIZE CRUCIBLE.

		Sizes.	Eighths.	Halves.	Ones.	Double Extras.
No. 1, of		5 $\frac{3}{4}$ x4 $\frac{3}{4}$	7 $\frac{1}{2}$ x5 $\frac{1}{2}$	8 $\frac{3}{4}$ x6 $\frac{1}{4}$	11 x7 $\frac{3}{4}$	12 $\frac{3}{4}$ x9 $\frac{1}{2}$
No. 2, of		4 $\frac{3}{4}$ x3 $\frac{3}{4}$	6 x4 $\frac{1}{4}$	7 x4 $\frac{3}{4}$	8 $\frac{1}{2}$ x6	.....
No. 3, of		3 $\frac{3}{4}$ x3	5 x3 $\frac{1}{4}$	5 $\frac{1}{4}$ x4	6 $\frac{3}{4}$ x4 $\frac{3}{4}$	.....
No. 4, of		2 $\frac{3}{4}$ x2 $\frac{1}{4}$	3 $\frac{3}{4}$ x2 $\frac{5}{8}$	4 $\frac{1}{4}$ x3	5 $\frac{1}{4}$ x4	.....
No. 5, of		.....	2 $\frac{3}{4}$ x1 $\frac{7}{8}$	3 $\frac{1}{8}$ x2 $\frac{1}{4}$	4 $\frac{1}{2}$ x3	.....

APPROXIMATE DIAMETERS OF COVERS.

For No. 1, of		4 $\frac{3}{4}$	5 $\frac{3}{4}$	6 $\frac{1}{4}$	7 $\frac{3}{4}$	9 $\frac{1}{2}$
For No. 2, of		...	4 $\frac{1}{2}$	4 $\frac{3}{4}$	...	...
For No. 3, of		...	3 $\frac{1}{2}$	4	...	...
For No. 4, of		...	2 $\frac{3}{4}$	3	...	...
For No. 5, of		...	2	2 $\frac{1}{2}$	...	...

We supply complete sets, single crucible or any combination desired.

BLACK LEAD CRUCIBLES.

Our Crucibles are made of "Best" materials throughout—viz.:

The finest quality of selected Ceylon Plumbago,
The Best Genuine German Clay,
Experienced Skilled Mechanics.

Our Crucibles will stand the greatest number of heats—at the least cost.

All Dimensions Given in List are External.

CRUCIBLES.

Nos.			No.	Height Outside Inches	Greatest Outside Inches	Capacity in Liquid Measure		
Nos. 0, 00, 000, 0000, \$1 80 per dozen						Gal.	Qt.	Pt.
No. 1/2	20 cents each		0	2	2			
No. 1	25 cents each		00	2 1/4	2 1/8			
No. 2	30 cents each		000	2 1/2	2 1/4			
No. 3	35 cents each		0000	3	2 1/2			
No. 4	40 cents each		1/2	3 1/4	3			1/4
No. 5	45 cents each		1	4	3 1/2			1/2
No. 6	50 cents each		2	4 1/2	4			3/4
No. 7	55 cents each		3	5	4 1/4			1
No. 8	60 cents each		4	5 1/4	4 1/2			1 1/4
No. 9	65 cents each		5	5 3/4	5 5/8			1 1/2
No. 10	70 cents each		6	6	4 3/4			1 3/4
Nos. 12 to 200.... 6 1/2 cts. per number			7	6 1/2	5	1	0	0
			8	7	5 1/2	1	0 1/2	
			9	7 1/4	6	1	1	
			10	7 3/4	6 1/2	2	0	
			12	8 1/4	7	2	1	
			14	9	7 1/4	3	0	
			16	9 1/2	7 3/4	3	1	
			18	10	8	1	0	0
			20	10 1/2	8 1/2	1	0	1
			25	11	9	1	1	0
			30	11 1/2	9 1/2	1	1	1
			35	12	10	1	3	0
			40	12 1/2	10 1/4	2	1	0
			45	13	10 3/4	2	2	0
			50	13 1/2	11	2	3	0
			55	13 3/4	11 1/4	2	3	1
			60	14	11 1/2	3	0	0
			65	14 1/4	11 5/8	3	0	1
			70	14 1/2	11 3/4	3	1	0
			80	15 1/4	12 3/4	3	2	0
			90	15 3/4	13	4	0	0
			100	16 1/4	13 1/4	4	1	0
			125	17 1/2	14 1/2	5	2	0
			150	19	15 1/4	6	3	0
			200	20 1/2	16 1/4	9	1	0

COVERS.

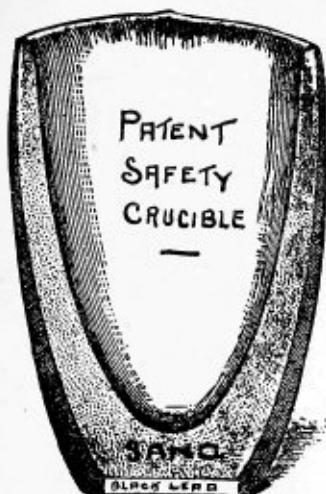
Nos. 0, 00, 000, 0000, \$1 50 per dozen	
Nos. 1/2, 1, 2, 3, 4, 5.. 15 cents each	
Nos. 6, 7, 8, 9, 10.... 20 cents each	
Nos. 12, 14, 16, 18, 20 25 cents each	
Nos. 25 to 200..... 1 ct. per number	

STIRRERS AND SKIMMERS.

Iron Sockets or Heads, each	
size	\$1 50 each
Iron Handles or Rods,	
each size	50 cents each
Blacklead Stirrers, large	
size	\$3 50 per doz.
Blacklead Stirrers, small	
size	3 00 per doz.
Blacklead Skimmers....	3 00 per doz.

Large size Stirrer blades are for use in Crucibles, larger than No. 40, and the small size in Crucibles smaller than No. 40.

Be sure to affix page number to every item.



PATENT SAFETY CRUCIBLES.

A combination of Black Lead and Sand Crucible with the strength of both combined and the Advantages of Either.

A Sand Crucible, covered with Black Lead outside, resists Chemicals and Fluxes used in melting equal to a Sand Pot and the Heat the same as a Black Lead Pot.

REGULAR SIZES IN STOCK.

Approximate Dimensions.

No. 0.	About 11	inches high by 8	inches Diameter at top, each,	\$1 25
No. 1.	About 9	inches high by 6	inches Diameter at top, each,	65
No. 2.	About 7½	inches high by 5	inches Diameter at top, each,	40
No. 3.	About 6	inches high by 4	inches Diameter at top, each,	32
No. 3½.	About 4¾	inches high by 3½	inches Diameter at top, each,	22
No. 4.	About 4½	inches high by 3	inches Diameter at top, each,	18
No. 5.	About 4	inches high by 2½	inches Diameter at top, each,	10
No. 6.	About 3	inches high by 2	inches Diameter at top, each,	08

No. 3½, on account of its bellied shape, preferred, especially by Watch Case Makers. On orders not less than 50 Pots of one size, Discount 15 per cent.

SPECIAL SIZES MADE TO ORDER.

These Crucibles are especially recommended to Refiners, Manufacturing Jewelers, Silversmiths, Watch Case Manufacturers, Gold Leaf Beaters, and all workers on Precious Metals.

They resist Flux or Heat better than any other Crucible, and furnish the greatest possible guarantee against loss of Metals, so frequently experienced by breakage of the ordinary Melting Pots.

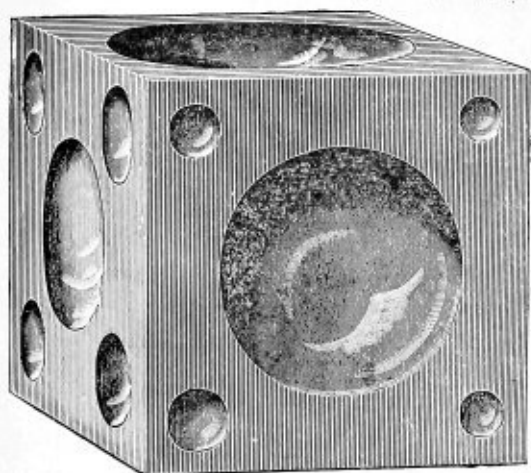
They withstand many Heats, and on account of their durability are cheaper than the ordinary Black Lead or Sand Pots in the market.

Keep these Crucibles in a dry, warm place, and only USE them WHEN PERFECTLY DRY. DO NOT ANNEAL, but HEAT them UP GRADUALLY BEFORE using the first time.

We carry the largest stock of Crucibles to be found in America.

If quick service is of value, send us your orders.

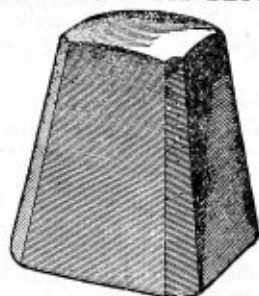
DAPPING DIES, PUNCHES AND CUTTERS.



DAPPING DIES.

IRON			BRASS	
No.	Each	Cube	No.	Each
1	\$1 00	1 1/4"	—	—
2	1 50	1 1/2"	—	—
3	1 75	1 3/4"	12	\$1 75
4	1 85	2"	13	2 00
5	2 10	2 1/8"	—	—
6	2 45	2 1/4"	15	2 50
7	3 25	2 1/2"	16	3 25
8	3 50	2 3/4"	17	4 00
9	4 50	3"	—	—

STEEL FACED DIE BLOCKS.



We carry a full assortment of these Die Blocks.

Flat Face, Square Shape; Rounded Face, Square Shape.

Flat Face, Oblong Shape; Rounded Face, Oblong Shape.

Any Desired Size 20c per lb.



DAPPING DIE PUNCHES AND CUTTERS—IMPORTED.

No.	Set of	Per Set
19	12	\$1 50
20	18	2 00
21	24	2 50
22	30	3 00
23	36	3 50

PUNCHES ONLY—AMERICAN MAKE.

No.	Set of	Per Set
24	12	\$1 75
25	18	2 50
26	24	3 25

Single Punches any size.....20c

Largest size is 1 1/8" Diameter.

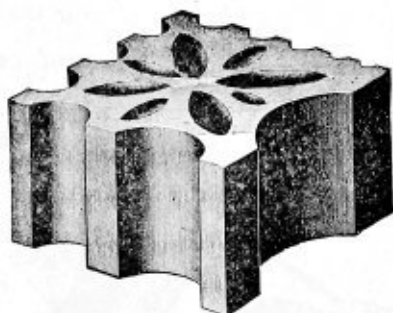
CUTTERS ONLY—AMERICAN MAKE.

No.	Set of	Per Set
27	12	\$1 50
28	18	2 25
29	24	3 00

Single Cutters, any size.....20c

Largest size is 1 1/8" Diameter.

DAPPING DIE AND DESIGN BLOCK FOR JEWELERS AND SILVERSMITHS.

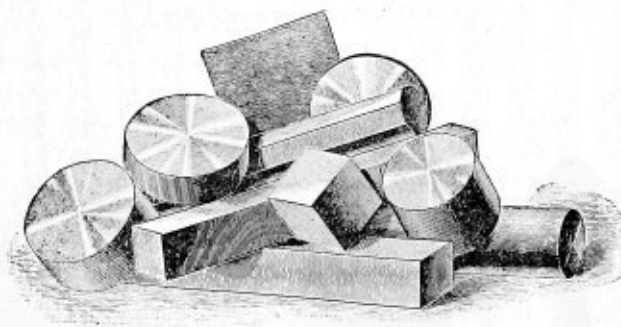


These illustrations show both sides of the Block. Designed for general use for shaping up rings, clusters, balls, ferrules, mountings, etc.

Size "A" is 4"x4" Square by 2½" thick. Each.....\$5 00
Size "B" is 5"x5" Square by 3" thick. Each.....6 50

ANNEALED CAST STEEL BLANKS

Known as Steel Hubs. Used for Making Dies for all Characters of Work.



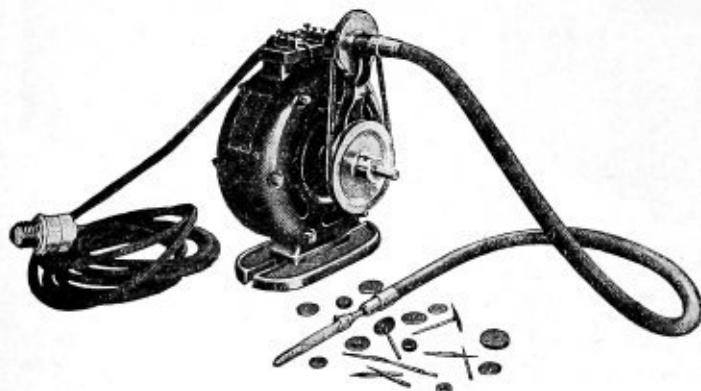
Number	Square	Number	Flat
C	1½x1½ each 30 cents	K	1½x7⁄8 each 18 cents
D	1¼x1¼ each 25 cents	L	1¼x¾ each 15 cents
E	1½x1½ each 20 cents	M	1½x¾ each 14 cents
G	1x1 each 15 cents	N	1x¾ each 14 cents
H	7⁄8x7⁄8 each 14 cents		
J	¾x¾ each 12 cents		

Order by respective number and be sure to affix page number, viz.:
3 only E-147. This system is very simple. You can't go wrong.

DIE SINKER'S & SILVERSMITH'S OUTFITS.

For Light Work Only.

MOTOR DRIVEN OUTFIT.

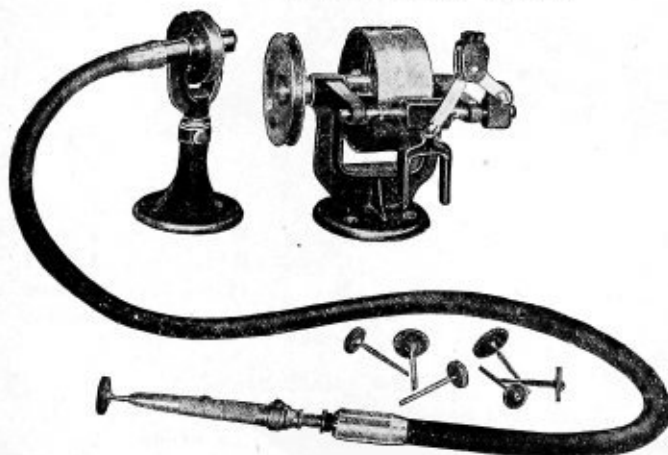


Furnished with a 3-foot Flexible shaft, one standard hand piece, 50 carbide wheels, a collection of burrs and 2 mandrels.

The above outfit is made for 110 volts direct current—220 volts direct current—and 500 volts direct current, also for alternating current of 110 volts.

Prices Upon Application Only.

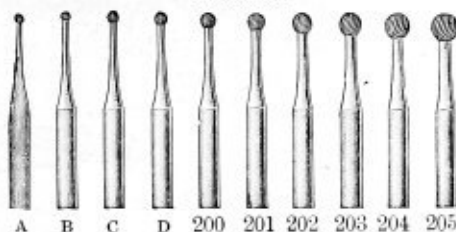
BELT DRIVEN OUTFIT.



Outfit complete with countershaft, 50 carbide wheels, mandrels, etc., same shaft and hand piece as above named.

Price, \$67 50

ROUND.



Each \$0.35

\$0.40

OVAL.



Each \$0.35

\$0.40

PEAR.



Each \$0.35

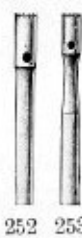
\$0.40

SUGAR-LOAF.



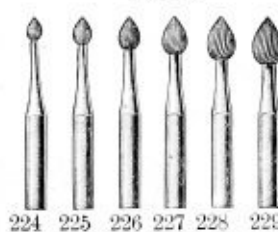
Each \$0.35

TREPINES.



Each \$0.50

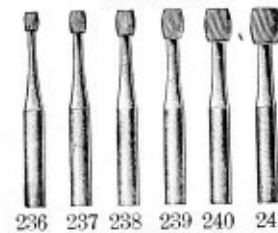
BUD.



Each \$0.35

\$0.40

BARREL.



Each \$0.35

\$0.40

CROWN SAW.



\$0.50

ROUND BUR.

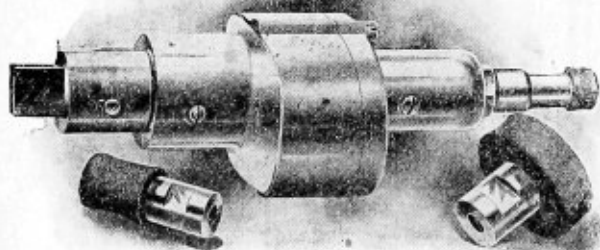
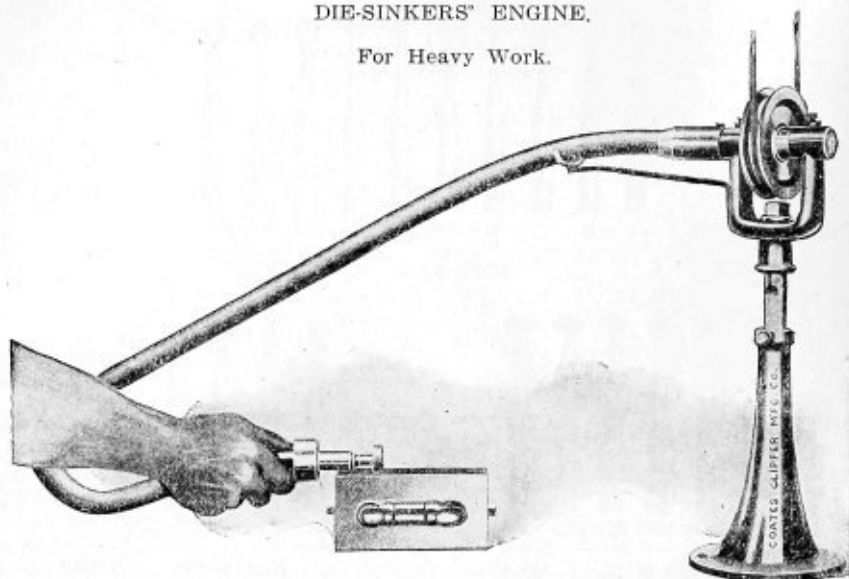
No. 20
Bur Gage

\$0.40

Always affix the page number to the item number, viz.: No. 205-149. When you check your Bills you will know the item is on page 149 and its No. is 205.

DIE-SINKERS' ENGINE.

For Heavy Work.



Engine,	\$35 00
Multiplier No. 1,	20 00
Countershaft,	15 00
<hr/>	
Price complete,	\$70 00

No. 1 Multiplier is furnished with three-eighths, one-half, and one-inch emery wheels.

PATENT MULTIPLIER.

No. 1 Multiplier furnished with this equipment is speeded up eight and one-half to one. At normal speed of 1200 to 1500 revolutions per minute of the flexible shaft, the emery wheels have a revolution per minute of 10,000 to 12,000, which gives the operator a very rapid cutting tool. It is extremely useful to drop forge manufacturers for grinding the wrinkles from drawing dies and for internal grinding on irregular blanking dies.

DIPPING BASKETS.



Capacity.	Each.	APPROXIMATE OUTSIDE MEASURE.		With	With	With	With
		Height.	Diam.	$\frac{1}{8}$ " Holes.	$\frac{1}{4}$ " Holes.	$\frac{3}{8}$ " Holes.	$\frac{1}{2}$ " Holes.
$\frac{1}{2}$ Gal.	\$0 90	6"	6"	No. 1	No. 5	No. 9	No. 13
1 Gal.	1 00	7"	7"	No. 2	No. 6	No. 10	No. 14
$1\frac{1}{2}$ Gal.	1 25	8"	8"	No. 3	No. 7	No. 11	No. 15
2 Gal.	1 50	9"	9"	No. 4	No. 8	No. 12	No. 16

Order by respective number and avoid error, and always affix page number, viz.:— $\frac{1}{2}$ Doz. No. 6.



Capacity.	Each.	APPROXIMATE OUTSIDE MEASURE.		With	With	With	With
		Height.	Diam.	$\frac{1}{8}$ " Holes.	$\frac{1}{4}$ " Holes.	$\frac{3}{8}$ " Holes.	$\frac{1}{2}$ " Holes.
$\frac{1}{4}$ Gal.	\$0 60	3"	$5\frac{1}{2}$ "	No. 17	No. 22	No. 27	No. 32
$\frac{1}{2}$ Gal.	80	4"	7"	No. 18	No. 23	No. 28	No. 33
1 Gal.	1 00	5"	8"	No. 19	No. 24	No. 29	No. 34
$1\frac{1}{2}$ Gal.	1 25	6"	9"	No. 20	No. 25	No. 30	No. 35
2 Gal.	1 50	6"	$10\frac{1}{2}$ "	No. 21	No. 26	No. 31	No. 36

Order by respective number and avoid error. Be sure to affix page number, viz.:—2 only No. 19.

STONEWARE PITCHERS.



No. "A"	Capacity $\frac{1}{4}$ Gal.	Each \$0 15
No. "B"	Capacity $\frac{1}{2}$ Gal.	Each 20
No. "C"	Capacity 1 Gal.	Each 35
No. "D"	Capacity $1\frac{1}{2}$ Gals.	Each 40
No. "E"	Capacity 2 Gals.	Each 45

Order by respective number and avoid error.

Note.—Do not confound the Pitchers on this page with similar cheap products which are not acid proof.

We Guarantee Our Goods Positively Acid Proof.

DIVIDERS.



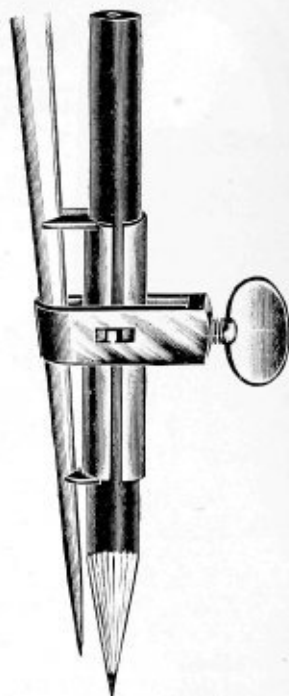
Made of Sheet Steel
Hardened Points
Brass
Adjusting Nuts
Bright Finish.

Lengths.	Dozen.
6"	\$ 5 50
8"	7 50
10"	10 00

EXCELSIOR PENCIL
HOLDER.

\$2 75 Dozen

Can be attached to any
divider.



STONEWARE JARS.

We Guarantee all our Jars to be Absolutely Acid Proof.

Covers Never Sent Unless
They Are Specified.



Capacity.	Jars, Each.	Covers, Each.
1/2 Gal.	\$0 20	\$0 15
1 Gal.	25	15
2 Gals.	40	15
3 Gals.	60	20
4 Gals.	80	20
5 Gals.	1 00	20
6 Gals.	1 20	20
8 Gals.	1 60	25
10 Gals.	2 00	30
12 Gals.	2 40	35
15 Gals.	3 00	40
20 Gals.	4 00	40
25 Gals.	6 25	50
30 Gals.	7 50	50

STARRETT'S SPRING DIVIDERS.

(Fays' Patent)



No 77

(Yankee)



No 83

Lengths	SPRING NUT		SOLID NUT		Lengths	SPRING NUT		SOLID NUT	
	No.	Each.	No.	Each.		No.	Each.	No.	Each.
2½"	A	\$1 15	H	\$1 00	2½"	O	\$0 80	U	\$0 65
3"	B	1 15	J	1 00	3"	P	85	V	70
4"	C	1 40	K	1 25	4"	Q	90	W	75
5"	D	1 40	L	1 25	5"	R	95	X	80
6"	E	1 75	M	1 60	6"	S	1 00	Y	85
8"	G	2 00	N	1 85	8"	T	1 25	Z	1 10

Order by respective letter number and avoid error—viz.: 1 only L-153.

This method tells exactly the page on which the item appears, also designates the size and kind of Dividers wanted.

We earnestly recommend the use of the above system of ordering goods from this catalog. It saves lengthy details. It assists us in filling orders promptly. It tells you exactly where to find the article when you have an invoice to check off and OK. Always affix page number to every item ordered.

STARRETT'S PATENT DIVIDERS.



Number	G	H	J	K
Lengths	6 in.	7 in.	8 in.	9 in.
Plain	\$0 85	\$0 90	\$1 00	1 15
Number	N	P	R	S
Nickel	1 10	1 15	1 25	1 40

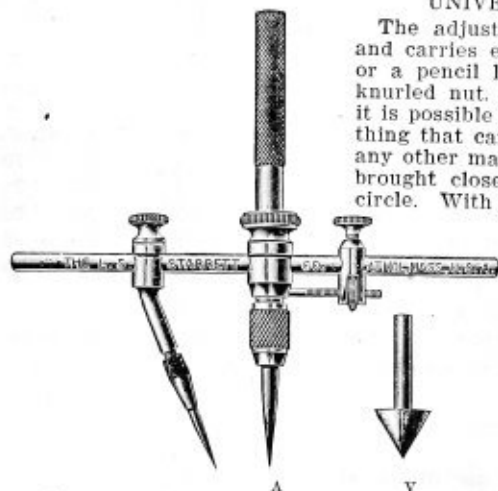
No. 85 A 7 inch, with divider legs only..	Each \$1 25
No. 85 B 9 inch, with divider legs only..	1 50
No. 85 C 7 inch, complete	2 25
No. 85 D 9 inch, complete	2 50

UNIVERSAL DIVIDERS No. 89.

The adjustable scriber holder is reversible and carries either a fine tempered steel point or a pencil lead, held in a split socket by a knurled nut. With the holder turned outward it is possible to work close to shoulders, something that cannot be done by a similar tool of any other make; turned inward, points may be brought close together to scribe the smallest circle. With 4 in. beam $7\frac{1}{2}$ in. and under may be scribed. An auxiliary beam 13 in. long is furnished, with which a 25 in. circle may be drawn. The V center point may be substituted for the regular point, adapting the tool for scribing around a drilled hole. We also furnish a pen attachment.

Prices.

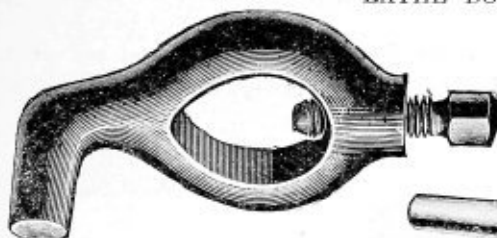
Tool with 4 in. beam and V center point.....	\$1 75
--	--------



Always write the page number to each item thus—1 only H-154.

Or, 1 only 85 B-154, it saves you time, avoids error and facilitates prompt filling of orders.

LATHE DOGS.



LE COUNT'S HEAVY STEEL DOG.
With Steel Screws, U. S. Standard.
Points Hardened.

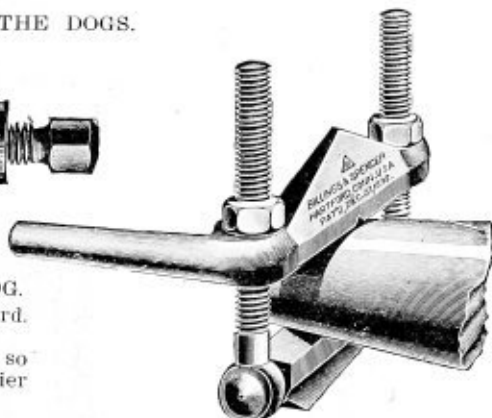
This Dog has a very heavy Boss, so that if the thread wears, a heavier screw can be substituted.

No.	Holds.	Each.
1	$\frac{3}{8}$ "	\$0 40
2	$\frac{1}{2}$ "	50
3	$\frac{5}{8}$ "	60
4	$\frac{3}{4}$ "	60
5	$\frac{7}{8}$ "	70
6	1"	70
7	$1\frac{1}{8}$ "	80
8	$1\frac{1}{4}$ "	80
9	$1\frac{3}{8}$ "	95
10	$1\frac{1}{2}$ "	95
11	$1\frac{3}{4}$ "	1 10
12	2"	1 20



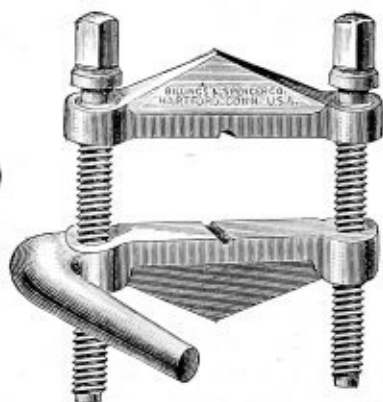
LE COUNT'S LIGHT STEEL DOG.
With Steel Screws, U. S. Standard.
Points Hardened.

No.	Holds.	Each.
10	$\frac{3}{8}$ "	\$0 35
20	$\frac{1}{2}$ "	35
30	$\frac{3}{4}$ "	50
40	1"	60
50	$1\frac{1}{4}$ "	75
60	$1\frac{1}{2}$ "	85
70	$1\frac{3}{4}$ "	1 00
80	2"	1 10



This style of Dog will hold straight and taper pieces.

No.	Between Screws.	Each.
A	$\frac{3}{4}$ "	\$0 75
B	$1\frac{1}{4}$ "	1 25
C	$1\frac{3}{4}$ "	1 75
D	$2\frac{1}{4}$ "	2 25
E	$2\frac{3}{4}$ "	2 75



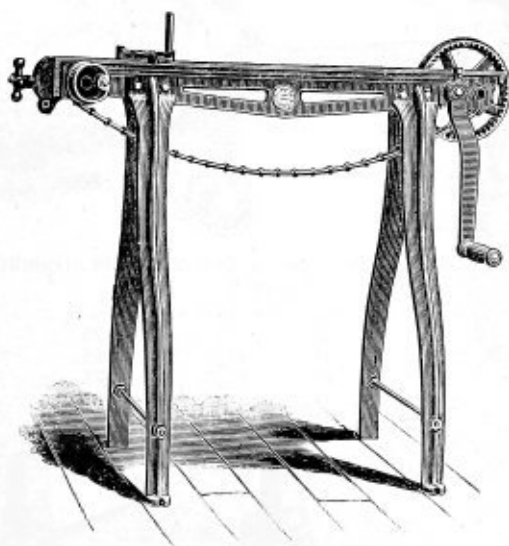
This and the above Dog is drop forged from bar steel.

No.	Between Screws.	Each.
G	$1\frac{1}{4}$ "	\$1 50
H	$2\frac{1}{4}$ "	2 00
J	$2\frac{3}{4}$ "	2 50

Every item has its own number. Combine same with the page number, thus: 1 only No. 10-155, and you will avoid error. This system possesses Real Merit.

HAND DRAW BENCH.

These draw benches have solid steel tongs, that can be placed at any point in the endless chain; also a coiler for wire, and a quickly-adjustable device for holding the plate; hand crank, for use when desired.



This machine is as great an improvement over the old wooden bench as the latter is over the hand drawing from plate in the vise. Long lengths of wire can be drawn by using the coiler.

4 feet long (Gabbro)—\$20 00

Net weight, 100 lbs.

POWER DRAW BENCH.

6 feet long (Gabion)—\$65 00

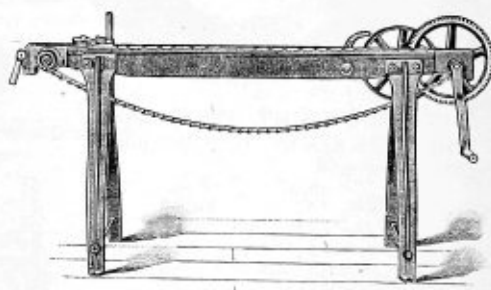
Net weight, 275 lbs.

8 feet long (Gadoid)—\$75 00

Net weight, 350 lbs.

10 feet long (Galage)—\$85 00

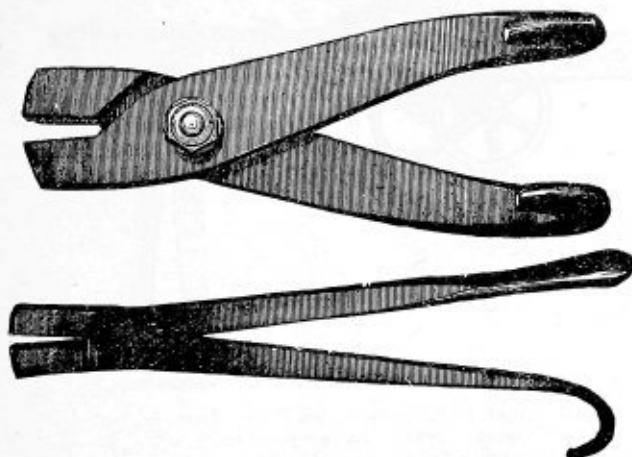
Net weight, 400 lbs.



All cut gears are used and the machines are heavy and powerful.

The 6 foot has tight and loose pulleys, 12 inches by $2\frac{1}{4}$ inches; the 8 foot and 10 foot, 14 inches by $2\frac{1}{2}$ inches, and should run about 125 revolutions per minute.

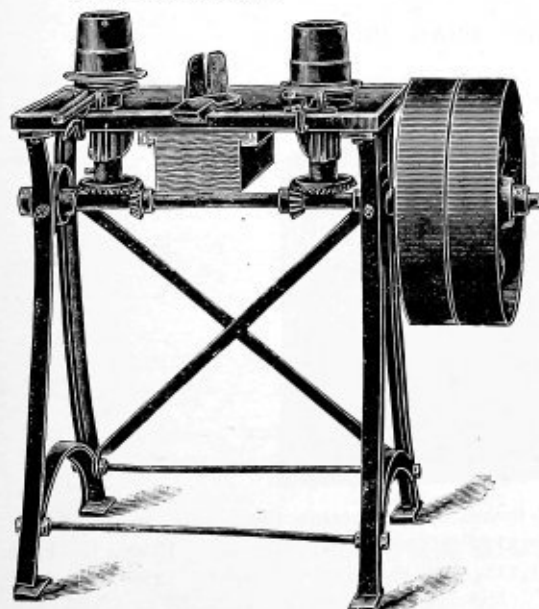
DRAW TONGS.



No.	Each	Jaws
1	\$3 00	1¼"
2	3 50	1⅜"
3	4 00	1½"
4	4 50	1⅝"

This is unquestionably the Best Draw Tong on the market.

Number,	5	6	7	8	9
Each,	\$0 85	\$1 00	\$1 25	\$2 00	\$2 25
Width of Jaw,	¾"	¾"	⅞"	⅞"	1"
Extreme Length,	8"	9"	10"	12"	14"



ROTARY DRAW BENCH.

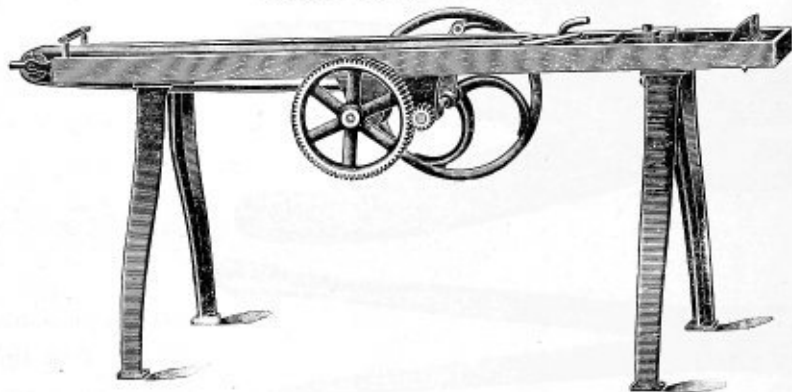
Specially Adapted for
Fine Wire.

Coilers, 3¼"x4".
Pulleys, 18"x2".

Price, \$60 00

Always affix page number to item number.

HAND DRAW BENCH.



Top is of Hard Wood, 2x12 inches and 7 feet long.
 Has large steel tongs; 2-inch Jaws—hardened.
 Height, 34 inches; floor space, 26x95 inches.
 Net weight, 245 lbs.; shipping weight, 350 lbs.

Price, with 4-inch Extra Heavy Single Belt, \$45 00

Price, with 4-inch Double Belt, 50 00

VIENNA DRAW PLATE.

Vienna Draw Plates are made of untempered steel with the holes drilled, but left unfinished, so that they can be broached out to suit any purpose or size.

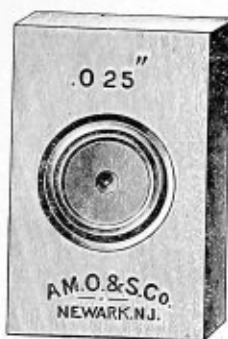


- | | | |
|---------|--|---------------|
| No. "A" | Full size plate is $6\frac{7}{8}$ inches, and contains 100 holes. | Price, \$8 00 |
| No. "B" | Quarter size plate, $1\frac{3}{4} \times 1\frac{5}{8}$ inches, with 100 holes. | Price, 8 00 |
| No. "C" | Quarter size plate, $1\frac{3}{4} \times 1\frac{5}{8}$ inches, with 36 holes. | Price, 2 88 |

Always specify page number with the item wanted. It saves much valuable time.

SAPPHIRE DRAW PLATES

We are the largest manufacturers of Sapphire Draw Plates in the United States.



Full Size Illustration of a
Sapphire Draw Plate.

	Each
.001 to .002.....	\$10 00
.002½ to .003.....	7 50
.003½ to .004.....	5 00
.004½ to .005.....	2 50
.005½ to .020.....	1 75
.021 & .022.....	2 00
.023 & .024.....	2 25
.025 & .026.....	2 50
.027 & .028.....	2 75
.029 & .030.....	3 25
.031 & .032.....	3 75
.033 & .034.....	4 25
.035 & .036.....	4 75
.037 & .038.....	5 25
.039 & .040.....	5 75
.041 & .042.....	6 25
.043 & .044.....	6 75
.045 & .046.....	7 25
.047 & .048.....	7 75
.049 & .050.....	8 25

Prices on Draw Plates over .050 will be made on application.

Note.—We have a thoroughly equipped plant for the manufacture of Watch Jewels, Electric Meter Jewel Screws and Jewels of Sapphire, Ruby, Agate, etc., to any specifications..

IMPORTED VIENNA DRAW PLATES

We carry these in stock:

	Each
¼ Size Plate, having 100 holes.....	\$8 00
Full Size Plate, having 100 holes.....	8 00

The ¼ Size Plate measures about 1¾" square.

The Full Size Plate measures about 1⅝"x6⅞"

DIAMOND DRAW PLATES

We can supply these on Special Order Only. We are ever glad to quote prices upon application.

LAFAYETTE DRAW PLATE.

An entirely new tool possessing merit. The holes in the body plate are drilled only half way through (all holes are the same size); into these holes are fitted tool steel disks which have been broached to the required size or sizes desired.

The top plate swings on a bolt whereby the disks are permanently held in their respective place.

THIS TOOL IS UNQUESTIONABLY THE MOST ECONOMICAL PLATE MADE. TRY ONE.

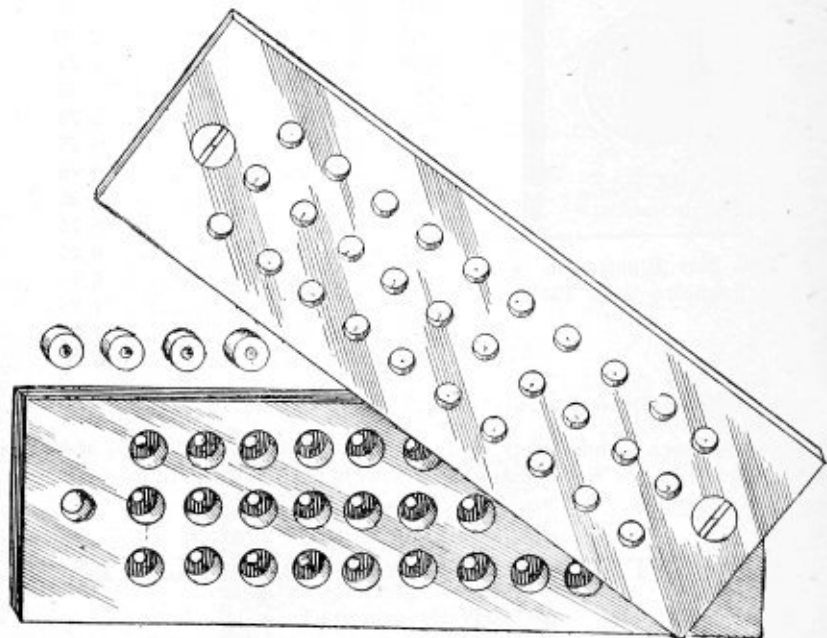


Illustration shows a 30-hole Plate.

No. U	10 hole Plate.....	\$4.50
No. V	20 " "	6.00
No. W	30 " "	7.50

EXTRA DISKS TO FIT PLATES.

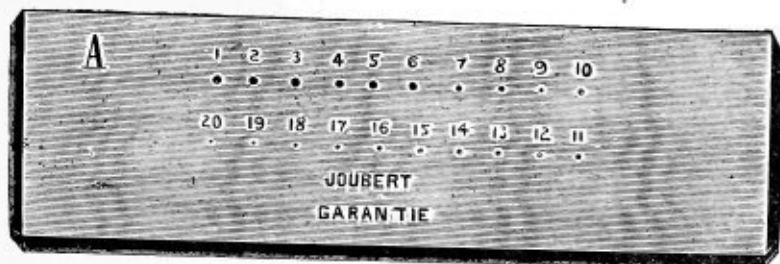
No. X	Sizes above .020".....	each, \$0.38
No. Y	" from .020" to .010".....	" .60
No. Z	" " .010" and smaller.....	" .75

Order by respective number and be sure to specify sizes wanted, also page number.

JOUBERT DRAW PLATES.

GARANTIE BRAND.

Illustrations are full size of each respective plate.



No. A. 20-Hole Plate. Price.....\$0.65



No. B. 20-Hole Plate. Price.....\$0.65

No. C. 20-Hole Plate. Price.....\$0.65

The largest hole in this plate is $\frac{3}{16}$ " diameter.

The smallest " " " " " " $\frac{1}{16}$ " " "

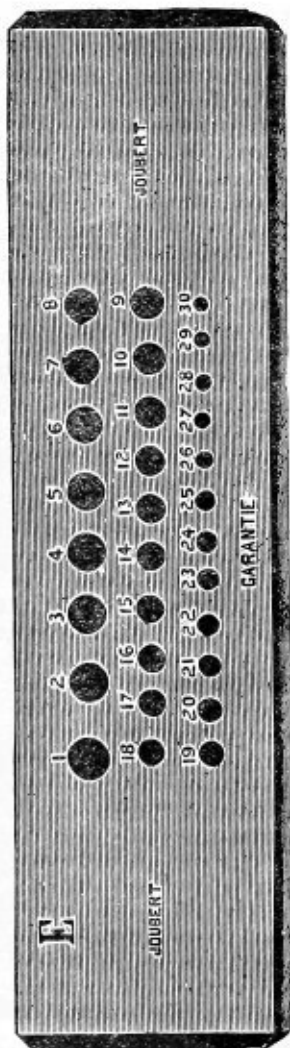


No. D. 30-Hole Plate. Price.....\$1.00

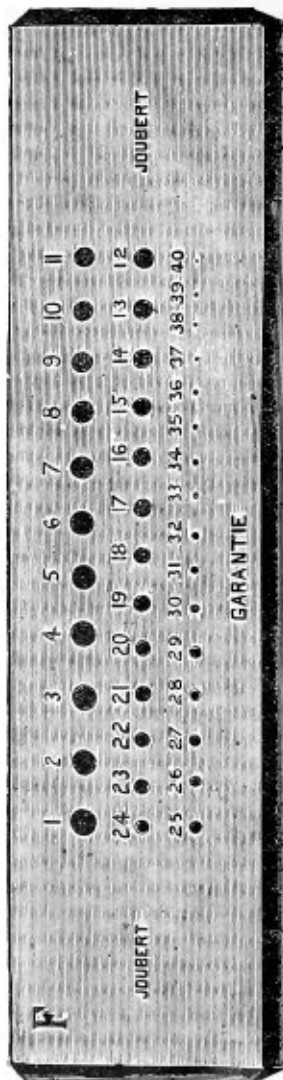
JOUBERT DRAW PLATES.

GARANTIE BRAND.

Illustrations are full size of each respective plate.



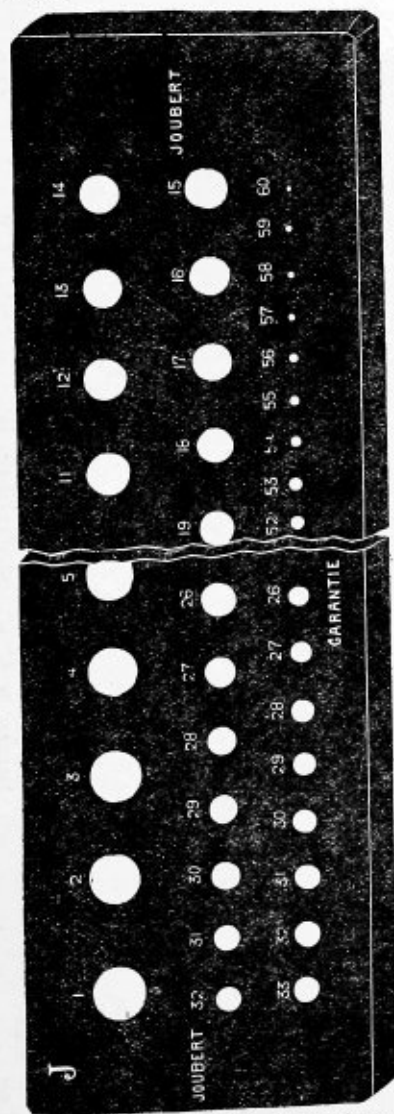
No. E. 30-Hole Plate. Price.....\$1.00



No. F. 40-Hole Plate. Price.....\$1.35

JOUBERT DRAW PLATES.
GARANTIE BRAND.

Illustration is full size of respective plate as regards sizes of holes shown with their respective numbers. Its actual length is one-third longer than illustration.



No. G plate has 40 holes.

Price, \$1.35.

Largest hole is $7/32''$ diameter.

Smallest " " $1/32''$ " "

No. H plate has 40 holes.

Price, \$1.60.

Largest hole is $1/4''$ diameter.

Smallest " " $1/16''$ " "

No. I plate has 40 holes.

Price, \$2.40.

Largest hole is $5/16''$ diameter.

Smallest " " $1/8''$ " "

No. J plate has 60 holes.

Price, \$3.00.

Largest hole is $5/16''$ diameter.

Smallest " " $1/16''$ " "

Note—Diameters given are only approximate.

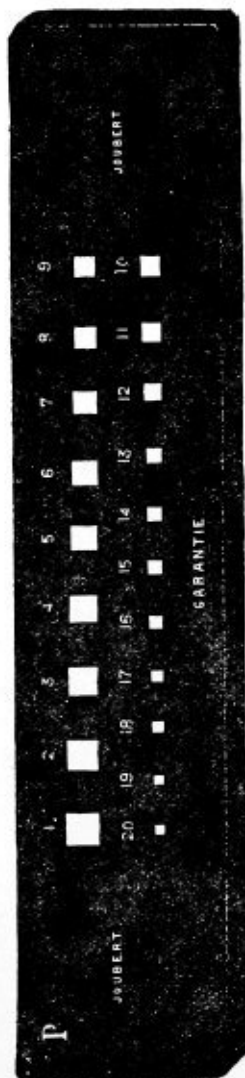
JOUBERT DRAW PLATES.

GARANTIE BRAND.

Illustrations are full size of each respective plate.



No. O. 20-Hole Plate. Price.....\$0.85

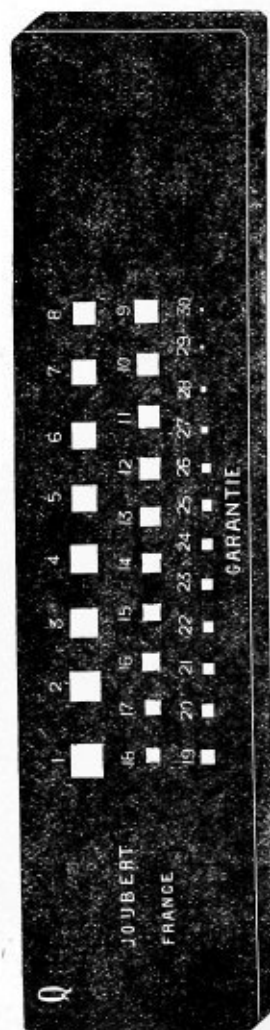


No. P. 20-Hole Plate. Price.....\$1.10

JOUBERT DRAW PLATES.

GARANTIE BRAND.

Illustration is full size of respective plate.



No. Q. 30-Hole Plate. Price.....\$1.60

No. R. 30-Hole Plate. Price.....\$2.00

Largest hole is $7/32$ " square.Smallest " " $1/16$ " "

No. S. 40-Hole Plate. Price.....\$2.60

Largest hole is $1/4$ " square.Smallest " " $1/16$ " "

No. T. 40-Hole Plate. Price.....\$3.25

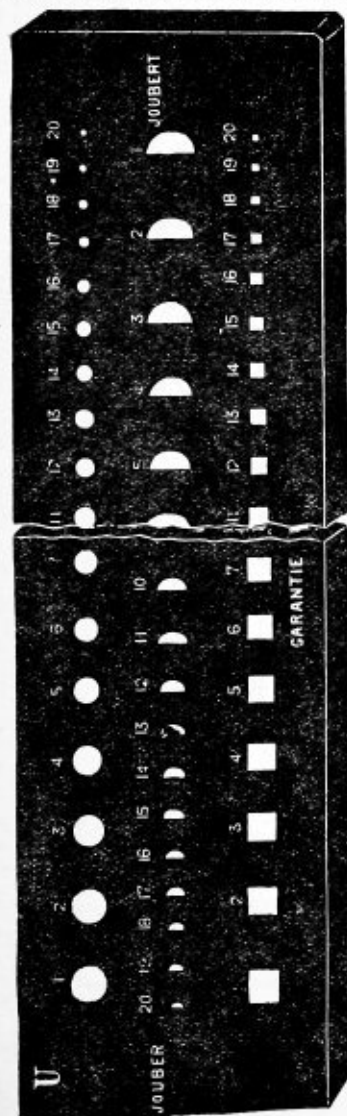
Largest hole is $5/16$ " square.Smallest " " $3/32$ " "

Note—All dimensions given are only approximate.

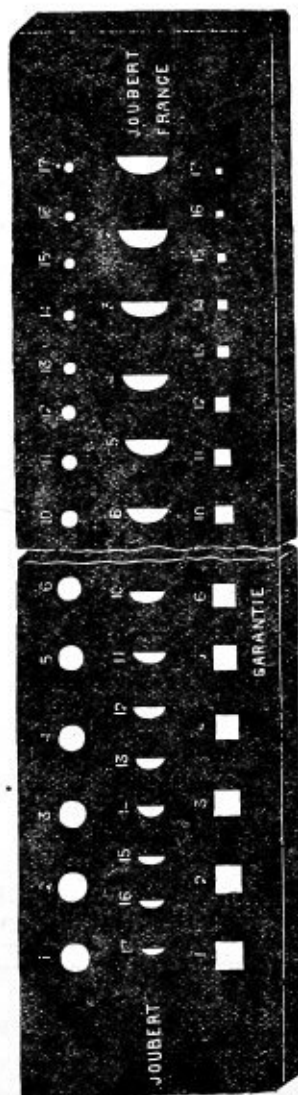
JOUBERT DRAW PLATES.

GARANTIE BRAND.

Illustrations are full size as regards holes shown with their respective numbers. Actual length of these two plates is about 7 inches.

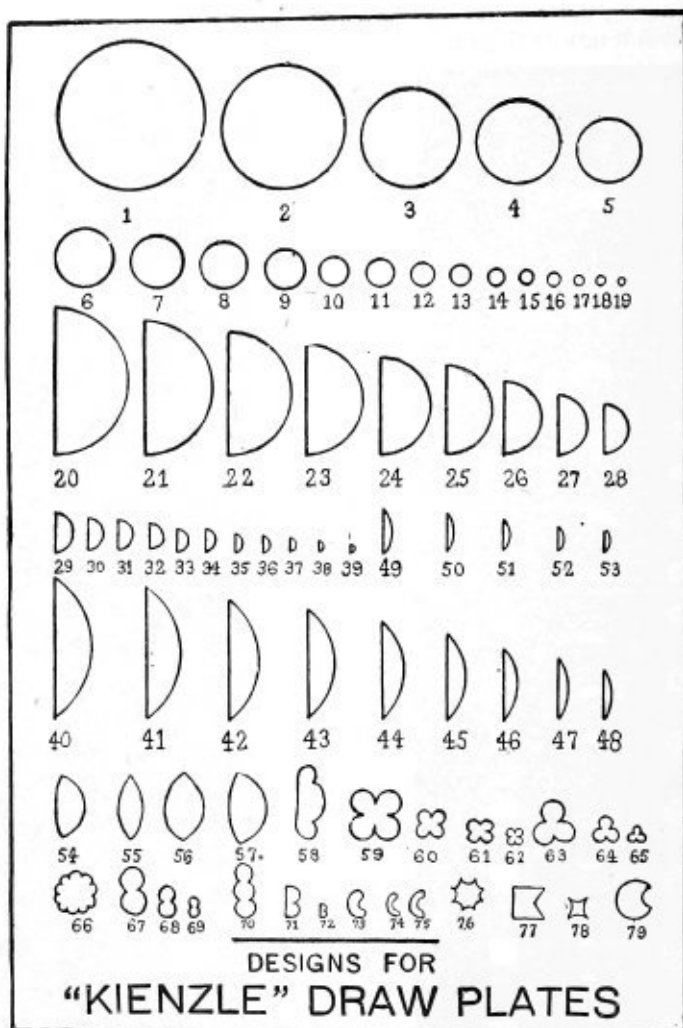


No. U. 60-Hole Plate. Price.....\$4.00



No. 51. 51-Hole Plate. Price.....\$3.50

STEEL DRAW PLATES.



Note—When ordering Draw Plates, give every essential detail, viz.: Largest and smallest holes to be in the plate, also the number of holes wanted in the plate, ever considering proper draught.

"KIENZLE" STEEL DRAW PLATES.

These plates are an American product and are manufactured from the finest grade of tool steel, thoroughly hardened, perfectly tempered and ready for use. "Kienzle" plates have stood the test for over half a century and are unexcelled in quality and workmanship by any other make. They are used for reducing wire or tubing of various kinds of metal of any size into almost any desired shape. In ordering draw plates, the most important point is to mention the largest and smallest size wanted in any shape; by so doing you will get a plate with proper draught. Be sure to state if it is to be used for solid or hollow wire. In ordering special shapes, we prefer, if possible, wire samples of the largest and smallest size. The following illustrations only give a slight idea of the many shapes and sizes that we can furnish, and in ordering from illustrations kindly order by respective number, which you will find below each style. Prices will be furnished on application.

ROUND HOLE DRAW PLATES.

Plate No.	Holes	Largest Hole	Smallest Hole	See Illustrations for Properly Graded Draught	Price Per Hole
1	12	$\frac{3}{4}$ "	$\frac{5}{8}$ "	From No. 1 down to No. 2	\$1 60
2	14	$\frac{5}{8}$ "	$\frac{1}{2}$ "	From No. 2 down to No. 3	80
3	10	$\frac{1}{2}$ "	$\frac{7}{16}$ "	From No. 3 down to No. 4	35
4	20	$\frac{7}{16}$ "	$\frac{5}{16}$ "	From No. 4 down to No. 5	30
5	6	$\frac{5}{16}$ "	$\frac{3}{32}$ "	From No. 5 down to No. 6	30
6	10	$\frac{3}{32}$ "	$\frac{1}{4}$ "	From No. 6 down to No. 7	25
7	10	$\frac{1}{4}$ "	$\frac{3}{32}$ "	From No. 7 down to No. 8	18
8	10	$\frac{3}{32}$ "	$\frac{3}{16}$ "	From No. 8 down to No. 9	18
9	20	$\frac{3}{16}$ "	$\frac{1}{8}$ "	From No. 9 down to No. 11	15
10	45	$\frac{1}{8}$ "	$\frac{3}{32}$ "	From No. 11 down to No. 19	15

All sizes smaller than $\frac{3}{32}$ " down, 12 cents per hole.

See illustrations of actual sizes. All dimensions given are approximate.

We can furnish plates with as small a hole as may be desired.

STEEL DRAW PLATES.

The following is a list of round hole Draw Plates regularly made for stock sizes:

Number of Plate.	Number of Holes in Plate.	Approximate Size of Large Hole.	Approximate Size of Small Hole.	Approximate Length of Plate	Approximate Width of Plate	Approximate Thickness	Price Per Hole
5/8"	20	.625	.440	13"	3"	1/2"	\$0 85
1/2"	20	.500	.355	10"	2 1/4"	3/8"	35
1/2"	25	.500	.325	12"	2 1/4"	3/8"	35
7/8"	20	.438	.305	9"	2"	3/8"	30
7/8"	25	.438	.275	10 1/2"	2"	3/8"	30
3/8"	20	.375	.250	9"	2"	3/8"	30
3/8"	25	.375	.228	10 1/2"	2"	3/8"	30
3/8"	70	.375	.080	11 1/2"	3"	3/8"	30
1"	80	.312	.060	12 1/2"	2 1/2"	3/8"	30
1 1/4"	50	.250	.075	8 1/2"	2 1/2"	1/8"	18
0 B. & S.	20	.325	.220	8"	1 3/4"	3/8"	25
0 B. & S.	25	.325	.195	9 1/4"	1 3/4"	3/8"	25
1 B. & S.	20	.289	.195	7 1/2"	1 3/4"	1/8"	20
1 B. & S.	25	.289	.175	8 1/2"	1 3/4"	1/8"	20
2 B. & S.	20	.257	.180	7"	1 1/2"	1/8"	18
2 B. & S.	25	.257	.160	8"	1 1/2"	1/8"	18
3 B. & S.	25	.229	.135	7 3/4"	1 1/2"	1/8"	18
3 B. & S.	40	.229	.090	7"	1 3/4"	1/8"	18
4 B. & S.	25	.204	.115	7 1/2"	1 1/2"	1/8"	15
4 B. & S.	40	.204	.070	6"	1 3/4"	1/8"	15
5 B. & S.	25	.181	.105	7"	1 1/4"	1/8"	15
5 B. & S.	40	.181	.065	5 1/2"	1 3/8"	1/8"	15
6 B. & S.	25	.162	.090	6 1/2"	1 1/4"	1/4"	15
6 B. & S.	40	.162	.055	5"	1 1/2"	1/4"	15
7 B. & S.	25	.144	.080	6"	1 1/4"	1/4"	12
7 B. & S.	40	.144	.045	5"	1 1/2"	1/4"	12
8 B. & S.	25	.128	.065	5 3/4"	1 1/4"	1/4"	12
8 B. & S.	40	.128	.035	4 1/4"	1 1/2"	1/4"	12
8 B. & S.	50	.128	.025	5 3/4"	1 3/4"	1/4"	12
8 B. & S.	60	.128	.015	6 1/4"	1 3/4"	1/4"	12
9 B. & S.	25	.114	.050	5 1/4"	1 1/8"	1/4"	12
9 B. & S.	40	.114	.025	4 3/4"	1 1/2"	1/4"	12
9 B. & S.	50	.114	.017	5 1/2"	1 3/4"	1/4"	12
10 B. & S.	20	.102	.062	4 1/2"	1 1/8"	1/4"	12
10 B. & S.	25	.102	.045	5"	1 1/8"	1/4"	12
10 B. & S.	30	.102	.038	4 1/2"	1 1/4"	1/4"	12
10 B. & S.	40	.102	.025	4 1/2"	1 1/2"	1/4"	12
11 B. & S.	20	.091	.052	4 3/4"	1 1/8"	1/4"	12
11 B. & S.	25	.091	.043	4 3/4"	1 1/8"	1/4"	12
11 B. & S.	30	.091	.034	4 3/4"	1 1/4"	1/4"	12
11 B. & S.	40	.091	.015	4 3/8"	1 1/2"	1/4"	12

How to order these plates—viz.:

1 only 1/2" Draw Plate with 25 holes—or—

1 only No. 6 B. & S. Plate with 40 holes, etc.

STEEL DRAW PLATES.

Round Hole Draw Plates—Stock Sizes.

Number of Plate	Number of Holes in Plate	Approximate Size of Large Hole	Approximate Size of Small Hole	Approximate Length of Plate	Approximate Width of Plate	Approximate Thickness	Price per Hole
12 B. & S.	20	.081	.048	4 $\frac{3}{8}$ "	1"	$\frac{7}{32}$ "	12
12 B. & S.	25	.081	.035	4 $\frac{3}{4}$ "	1 $\frac{1}{8}$ "	$\frac{7}{32}$ "	12
12 B. & S.	30	.081	.027	4 $\frac{3}{8}$ "	1 $\frac{1}{4}$ "	$\frac{7}{32}$ "	12
12 B. & S.	40	.081	.014	4 $\frac{3}{8}$ "	1 $\frac{1}{2}$ "	$\frac{7}{32}$ "	12
13 B. & S.	20	.072	.035	4 $\frac{3}{8}$ "	1"	$\frac{7}{32}$ "	12
13 B. & S.	25	.072	.025	4 $\frac{3}{8}$ "	1 $\frac{1}{8}$ "	$\frac{7}{32}$ "	12
13 B. & S.	30	.072	.017	4 $\frac{3}{8}$ "	1 $\frac{1}{16}$ "	$\frac{7}{32}$ "	12
13 B. & S.	40	.072	.012	4 $\frac{3}{8}$ "	1 $\frac{1}{2}$ "	$\frac{7}{32}$ "	12
14 B. & S.	20	.064	.026	4 $\frac{1}{4}$ "	1"	$\frac{7}{32}$ "	12
14 B. & S.	25	.064	.018	4 $\frac{1}{2}$ "	1 $\frac{1}{8}$ "	$\frac{7}{32}$ "	12
14 B. & S.	30	.064	.013	4 $\frac{1}{4}$ "	1 $\frac{1}{16}$ "	$\frac{7}{32}$ "	12
14 B. & S.	40	.064	.010	4 $\frac{1}{4}$ "	1 $\frac{1}{2}$ "	$\frac{7}{32}$ "	12
15 B. & S.	20	.057	.020	4 $\frac{1}{8}$ "	1"	$\frac{7}{32}$ "	12
15 B. & S.	25	.057	.015	4 $\frac{1}{2}$ "	1 $\frac{1}{8}$ "	$\frac{7}{32}$ "	12
15 B. & S.	30	.057	.011	4 $\frac{1}{8}$ "	1 $\frac{1}{4}$ "	$\frac{7}{32}$ "	12
15 B. & S.	40	.057	.009	4 $\frac{1}{8}$ "	1 $\frac{1}{2}$ "	$\frac{7}{32}$ "	12
16 B. & S.	20	.051	.015	4 $\frac{1}{8}$ "	1"	$\frac{7}{32}$ "	12
16 B. & S.	25	.051	.011	4 $\frac{1}{2}$ "	1 $\frac{1}{8}$ "	$\frac{7}{32}$ "	12
16 B. & S.	30	.051	.009	4 $\frac{1}{8}$ "	1 $\frac{1}{4}$ "	$\frac{7}{32}$ "	12
16 B. & S.	40	.051	.007	4 $\frac{1}{8}$ "	1 $\frac{1}{2}$ "	$\frac{7}{32}$ "	12
17 B. & S.	20	.045		4 $\frac{1}{8}$ "	1"	$\frac{7}{32}$ "	12
17 B. & S.	25	.045		4 $\frac{3}{8}$ "	1 $\frac{1}{8}$ "	$\frac{7}{32}$ "	12
17 B. & S.	30	.045		4 $\frac{1}{8}$ "	1 $\frac{1}{4}$ "	$\frac{7}{32}$ "	12
17 B. & S.	40	.045		4 $\frac{1}{8}$ "	1 $\frac{1}{2}$ "	$\frac{7}{32}$ "	12
18 B. & S.	20	.040		4 $\frac{1}{8}$ "	1"	$\frac{7}{32}$ "	12
18 B. & S.	25	.040		4 $\frac{3}{8}$ "	1 $\frac{1}{8}$ "	$\frac{7}{32}$ "	12
18 B. & S.	30	.040		4 $\frac{1}{8}$ "	1 $\frac{1}{4}$ "	$\frac{7}{32}$ "	12
18 B. & S.	40	.040		4 $\frac{1}{8}$ "	1 $\frac{1}{2}$ "	$\frac{7}{32}$ "	12
19 B. & S.	20	.036		4 $\frac{1}{8}$ "	1"	$\frac{7}{32}$ "	12
19 B. & S.	25	.036		4 $\frac{3}{8}$ "	1 $\frac{1}{8}$ "	$\frac{7}{32}$ "	12
19 B. & S.	30	.036		4 $\frac{1}{8}$ "	1 $\frac{1}{4}$ "	$\frac{7}{32}$ "	12
19 B. & S.	40	.036		4 $\frac{1}{8}$ "	1 $\frac{1}{2}$ "	$\frac{7}{32}$ "	12
20 B. & S.	20	.032		4 $\frac{1}{8}$ "	1"	$\frac{7}{32}$ "	12
20 B. & S.	25	.032		4 $\frac{3}{8}$ "	1 $\frac{1}{8}$ "	$\frac{7}{32}$ "	12
20 B. & S.	30	.032		4 $\frac{1}{8}$ "	1 $\frac{1}{4}$ "	$\frac{7}{32}$ "	12
20 B. & S.	40	.032		4 $\frac{1}{8}$ "	1 $\frac{1}{2}$ "	$\frac{7}{32}$ "	12

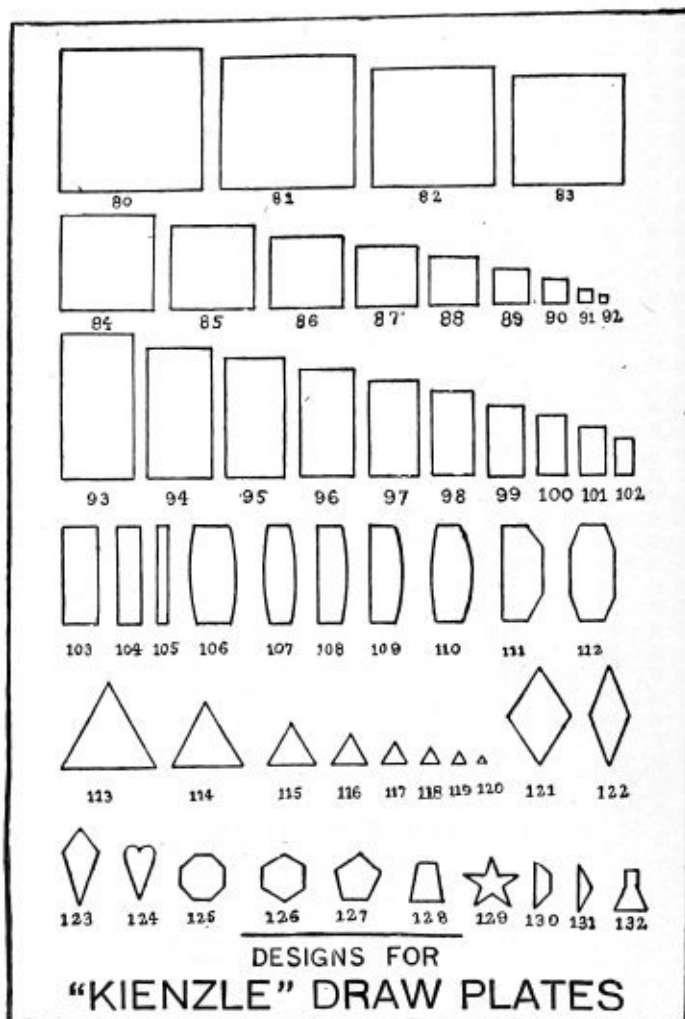
All Nos. 21 to 36, price per hole, 15c.

THREE CORNERED HOLES.

Number of Plate	Holes	Largest Hole about	Smallest Hole about	Graduated	Price per Hole
113	About 20	$\frac{1}{2}$ "	$\frac{3}{8}$ "	From 113 to 114	\$1 35
114	About 20	$\frac{3}{8}$ "	$\frac{1}{4}$ "	From 114 to 115	1 00
115	About 15	$\frac{1}{4}$ "	$\frac{7}{16}$ "	From 115 to 116	55
116	About 15	$\frac{3}{16}$ "	$\frac{1}{8}$ "	From 116 to 117	40
117	About 15	$\frac{1}{8}$ "	$\frac{3}{32}$ "	From 117 to 118	30
118	About 20	$\frac{3}{32}$ "	$\frac{1}{16}$ "	From 118 to 119	30
119	About 25	$\frac{1}{16}$ "	$\frac{3}{32}$ "	From 119 to 120	30

STEEL DRAW PLATES.

With Square, Oblong Square and Fancy Holes.



Be sure to give every detail when ordering Draw Plates.

STEEL DRAW PLATES.

SQUARE HOLES.

No. 80 about $\frac{3}{4}$ " down to No. 81 about $\frac{11}{16}$ " about 8 Holes.....	\$3 25
No. 81 about $\frac{11}{16}$ " down to No. 82 about $\frac{5}{8}$ " about 8 Holes.....	2 85
No. 82 about $\frac{5}{8}$ " down to No. 83 about $\frac{9}{16}$ " about 8 Holes.....	2 50
No. 83 about $\frac{9}{16}$ " down to No. 84 about $\frac{1}{2}$ " about 8 Holes.....	2 25
No. 84 about $\frac{1}{2}$ " down to No. 85 about $\frac{7}{16}$ " about 8 Holes.....	1 50
No. 85 about $\frac{7}{16}$ " down to No. 86 about $\frac{3}{8}$ " about 10 Holes.....	1 25
No. 86 about $\frac{3}{8}$ " down to No. 87 about $\frac{1}{4}$ " about 10 Holes.....	1 15
No. 87 about $\frac{1}{4}$ " down to No. 88 about $\frac{1}{4}$ " about 10 Holes.....	90
No. 88 about $\frac{1}{4}$ " down to No. 89 about $\frac{1}{8}$ " about 10 Holes.....	60
No. 89 about $\frac{1}{8}$ " down to No. 90 about $\frac{1}{8}$ " about 12 Holes.....	45
No. 90 about $\frac{1}{8}$ " down to No. 91 about $\frac{3}{32}$ " about 15 Holes.....	30
No. 91 about $\frac{3}{32}$ " down to No. 92 about $\frac{1}{16}$ " about 20 Holes.....	30

We can furnish these from No. 92 down as fine as desired.

OBLONG SQUARE HOLES.

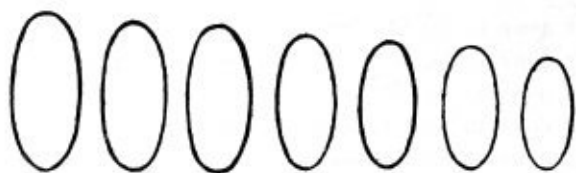
	Per Hole		Per Hole
No. 93 down,	\$3 75	No. 98 down,	\$1 50
No. 94 down,	3 45	No. 99 down,	1 00
No. 95 down,	3 25	No. 100 down,	95
No. 96 down,	2 60	No. 101 down,	75
No. 97 down,	1 85	No. 102 down,	65

Prices for Oblong Square Hole Plates are for plates having not less than 15 holes.

Note—Each Draw Plate is made by hand and by expert mechanics. They are made for proper service and not misuse. It is possible to break any Draw Plate by crowding it beyond its capacity.

Use care in ordering, also give same proper use, and they will earn you much money.

STEEL DRAW PLATES.



133 134 135 136 137 138 139



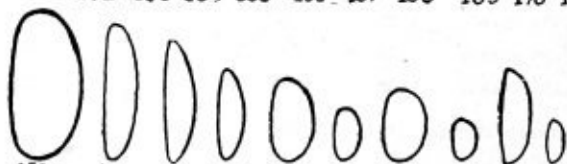
140 141 142 143 144 145 146 147 148 149 150 151



152 153 154 155 156 157 158 159 160



161 162 163 164 165 166 167 168 169 170 171



172 173 174 175 176 177 178 179 180 181

DESIGNS FOR
"KIENZLE" DRAW PLATES

STEEL DRAW PLATES.

HALF ROUND HOLES.

		Price, Per Hole.
No. 20 about $\frac{3}{4}$ " down to	No. 21 about $\frac{11}{16}$ " about 6 Holes.....	\$2 75
No. 21 about $\frac{11}{16}$ " down to	No. 22 about $\frac{5}{8}$ " about 6 Holes.....	2 50
No. 22 about $\frac{5}{8}$ " down to	No. 23 about $\frac{7}{8}$ " about 7 Holes.....	1 65
No. 23 about $\frac{7}{8}$ " down to	No. 24 about $\frac{1}{2}$ " about 7 Holes.....	1 60
No. 24 about $\frac{1}{2}$ " down to	No. 25 about $\frac{7}{16}$ " about 10 Holes.....	1 10
No. 25 about $\frac{7}{16}$ " down to	No. 26 about $\frac{3}{8}$ " about 10 Holes.....	1 10
No. 26 about $\frac{3}{8}$ " down to	No. 27 about $\frac{1}{2}$ " about 10 Holes.....	1 00
No. 27 about $\frac{1}{2}$ " down to	No. 28 about $\frac{1}{4}$ " about 18 Holes.....	75
No. 28 about $\frac{1}{4}$ " down to	No. 29 about $\frac{5}{16}$ " about 10 Holes.....	50
No. 29 about $\frac{5}{16}$ " down to	No. 30 about $\frac{3}{16}$ " about 10 Holes.....	45
No. 30 about $\frac{3}{16}$ " down to	No. 31 about $\frac{5}{32}$ " about 10 Holes.....	35
No. 31 about $\frac{5}{32}$ " down to	No. 32 about $\frac{1}{8}$ " about 10 Holes.....	35
No. 32 about $\frac{1}{8}$ " down to	No. 39 about $\frac{1}{16}$ " about 30 Holes.....	30

The thin Half Round Holes running from No. 40 to No. 49 on cut have the same number of holes between each size as the regular half round holes. We can also furnish these with heavier or easier draughts as desired.

THIN HALF ROUND HOLES.

	Per Hole.		Per Hole.
No. 40 down,	\$2 75	No. 46 down,	\$1 00
No. 41 down,	2 50	No. 47 down,	80
No. 42 down,	1 65	No. 48 down,	60
No. 43 down,	1 60	No. 49 down,	60
No. 44 down,	1 25	No. 50 down,	50
No. 45 down,	1 25		

Nos. 51, 52 and 53 down at 35 cents per Hole.

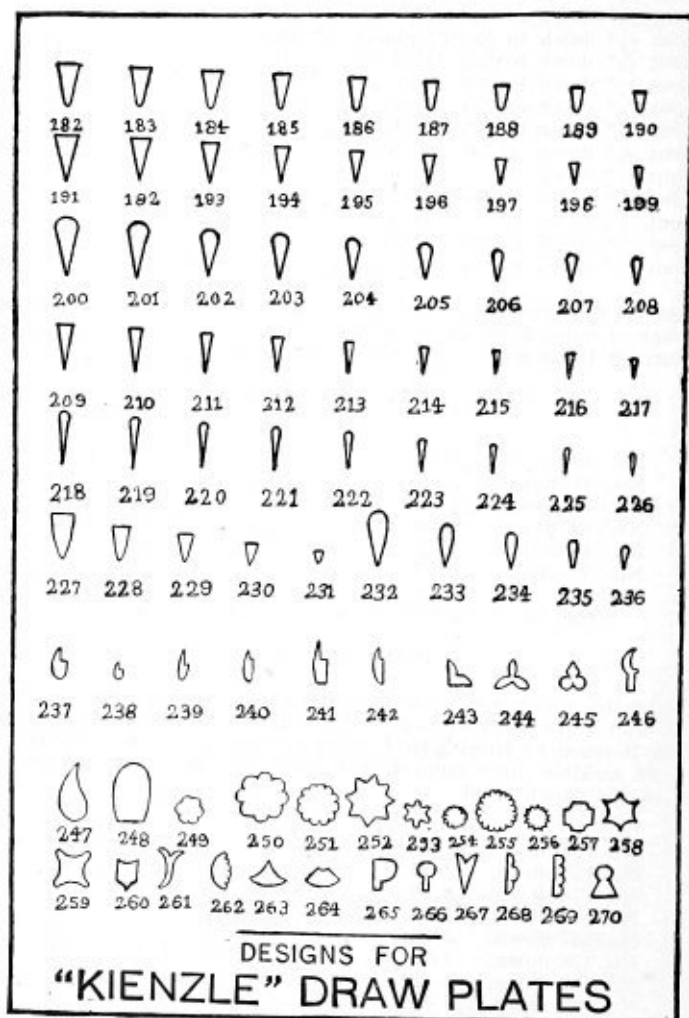
OVAL HOLES.

The oval holes numbered from No. 133 to 151 are regularly used for hollow wire work, and show a difference of 1 millimeter between numbers. In the larger sizes it requires from 2 to 4 holes to draw from one millimeter to the other, in the smaller sizes from 4 to 6 holes are required, according to the thickness of the stock used.

	Per Hole.		Per Hole.
No. 133 down,	\$2 85	No. 143 down,	\$1 10
No. 134 down,	2 50	No. 144 down,	1 00
No. 135 down,	2 50	No. 145 down,	90
No. 136 down,	2 50	No. 146 down,	75
No. 137 down,	2 25	No. 147 down,	50
No. 138 down,	1 85	No. 148 down,	40
No. 139 down,	1 85	No. 149 down,	30
No. 140 down,	1 50	No. 151 down,	30
No. 141 down,	1 25	No. 151 down,	30
No. 142 down,	1 15		

Note—All prices named on this page are for plates having not less than 15 holes each.

STEEL DRAW PLATES.



STEEL DRAW PLATES.

KNIFE EDGE HOLES.

No. 182 to No. 184 about 16 Holes.
 No. 184 to No. 187 about 15 Holes.
 No. 187 to No. 190 about 20 Holes.

No. 182 down,	\$0 55	per Hole.
No. 183 down,	45	per Hole.
No. 184 down,	35	per Hole.
No. 185 down,	35	per Hole.
No. 186 down,	30	per Hole.
No. 187 down,	30	per Hole.
No. 188 down,	30	per Hole.
No. 189 down,	30	per Hole.
No. 190 down,	30	per Hole.

Can be made as small as desired.

No. 197 to No. 199 about 10 Holes.
 No. 194 to No. 197 about 20 Holes.
 No. 197 to No. 199 about 10 Holes.

Can be made as small as desired.

No. 200 to No. 203 about 15 Holes.
 No. 203 to No. 206 about 20 Holes.
 No. 206 to No. 208 about 10 Holes.

Can be made as small as desired.

No. 209 to No. 213 about 20 Holes.
 No. 213 to No. 217 about 30 Holes.

Can be made as small as desired.

No. 218 to No. 222 about 30 Holes.
 No. 222 to No. 231 about 30 Holes.

Can be made as small as desired.

No. 227 to No. 229 about 25 Holes.
 No. 229 to No. 231 about 25 Holes.
 No. 232 to No. 234 about 30 Holes.
 No. 234 to No. 236 about 20 Holes.

We can furnish any style or size in knife edge plates. In ordering kindly send wire sample of largest and smallest holes so as to get the correct plate, as there are so many styles in knife edge plates.

All plates No. 191 and finer are the same average prices as given in above list.

Prices are for plates having not less than 15 holes each.

STRAIGHT SHANK DRILLS.



We can furnish all makes of High Grade Drills. Specify which make you want.

LETTER SIZES

Diameter Inches	Price per Dozen	Price Each	Decimals of 1 inch
A	\$2 90	\$0 26	.234
B	3 00	27	.238
C	3 10	28	.242
D	3 20	29	.246
E	3 30	30	.250
F	3 40	30	.257
G	3 50	31	.261
H	3 60	32	.266
I	3 70	33	.272
J	3 80	34	.277
K	3 90	35	.281
L	4 00	36	.290
M	4 10	36	.295
N	4 20	37	.302
O	4 30	38	.316
P	4 40	39	.323
Q	4 60	40	.332
R	4 80	42	.339
S	5 00	44	.348
T	5 20	45	.358
U	5 40	47	.368
V	5 60	49	.377
W	5 80	51	.386
X	6 00	53	.397
Y	6 40	55	.404
Z	6 80	59	.413

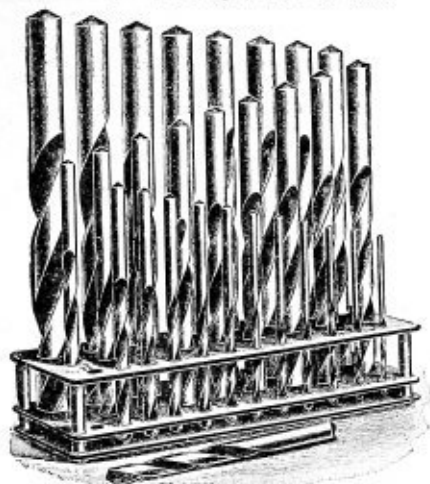
NUMBER SIZES

Diameter Inches	Price per Dozen	Price Each	Decimals of 1 inch	Number by Gauge	Decimals of 1 inch	Number by Gauge	Decimals of 1 inch
A	\$2 90	\$0 26	.234	1	.2280	41	.0960
B	3 00	27	.238	2	.2210	42	.0935
C	3 10	28	.242	3	.2130	43	.0900
D	3 20	29	.246	4	.2090	44	.0860
E	3 30	30	.250	5	.2055	45	.0820
F	3 40	30	.257	6	.2040	46	.0810
G	3 50	31	.261	7	.2010	47	.0785
H	3 60	32	.266	8	.1990	48	.0760
I	3 70	33	.272	9	.1960	49	.0730
J	3 80	34	.277	10	.1935	50	.0700
K	3 90	35	.281	11	.1910	51	.0670
L	4 00	36	.290	12	.1890	52	.0635
M	4 10	36	.295	13	.1850	53	.0595
N	4 20	37	.302	14	.1820	54	.0550
O	4 30	38	.316	15	.1800	55	.0520
P	4 40	39	.323	16	.1770	56	.0465
Q	4 60	40	.332	17	.1730	57	.0430
R	4 80	42	.339	18	.1695	58	.0420
S	5 00	44	.348	19	.1660	59	.0410
T	5 20	45	.358	20	.1610	60	.0400
U	5 40	47	.368	21	.1590	61	.039
V	5 60	49	.377	22	.1570	62	.038
W	5 80	51	.386	23	.1540	63	.037
X	6 00	53	.397	24	.1520	64	.036
Y	6 40	55	.404	25	.1495	65	.035
Z	6 80	59	.413	26	.1470	66	.033
NUMBER SIZES				27	.1440	67	.032
				28	.1405	68	.031
				29	.1360	69	.02925
				30	.1285	70	.028
				31	.1200	71	.026
				32	.1160	72	.025
				33	.1130	73	.024
				34	.1110	74	.0225
				35	.1100	75	.021
				36	.1065	76	.020
				37	.1040	77	.018
				38	.1015	78	.016
				39	.0995	79	.0145
				40	.0980	80	.0135

	Dozen	Each
Nos. 1 to 5	\$2 35	\$0 22
Nos. 6 to 10	2 25	21
Nos. 11 to 15	2 10	20
Nos. 16 to 20	1 95	19
Nos. 21 to 25	1 75	17
Nos. 26 to 30	1 55	15
Nos. 31 to 35	1 40	14
Nos. 36 to 40	1 25	12
Nos. 41 to 45	1 10	10
Nos. 46 to 60	95	09
Nos. 61 to 70	90	08
Nos. 71 to 80	1 00	09

PATENT DRILL HOLDER.

Made of non-corrosive metal, with a bright nickel finish. There is no chance for the holes to fill up with chips, dust or dirt.



	Gross	$\frac{1}{2}$ Gross	Doz.
No. 1 holds drills Nos. 1 to 60.....	\$53 00	\$27 50	\$5 25
No. 3 holds drills $\frac{1}{16}$ " to $\frac{1}{2}$ " by 64ths.....	65 00	35 00	6 25



This holder gives the number and pitch of taps, with tapping and clearing sizes of corresponding drills—not Theoretical sizes, as in published tables, but Actual Working sizes that you can depend on for correctness.

	Gross	$\frac{1}{2}$ Gross	Doz.
No. 2 With Index Plate, holds drills Nos 1 to 60....	\$63 00	\$34 00	\$6 25
No. 4 With Index Plate, holds drills $\frac{1}{16}$ " to $\frac{1}{2}$ " by 64ths	75 00	40 00	7 25

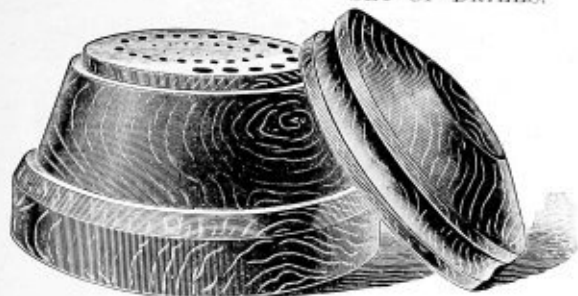
STRAIGHT SHANK DRILLS.



FRACTIONAL SIZES Jobbers' and Machinists Sets.				MILLIMETER SIZES			
Diameter Inches	Price per Dozen	Price Each	Decimal Equivalents	Diameter M. M.	Price per Dozen	Price Each	Diameter in Decimals of 1 Inch
$\frac{1}{32}$	\$0 90	\$0 09	.0312	1	\$0 90	\$0 08	.0393
$\frac{3}{64}$	1 00	09	.0468	$1\frac{1}{2}$	95	09	.0590
$\frac{1}{16}$	1 00	09	.0625	2	1 10	09	.0787
$\frac{5}{64}$	1 10	10	.0781	$2\frac{1}{2}$	1 25	12	.0984
$\frac{3}{32}$	1 20	11	.0937	3	1 40	14	.1181
$\frac{7}{64}$	1 30	12	.1093	$3\frac{1}{2}$	1 55	15	.1378
$\frac{1}{8}$	1 45	13	.125	4	1 75	17	.1575
$\frac{9}{64}$	1 60	15	.1406	$4\frac{1}{2}$	1 95	19	.1771
$\frac{5}{32}$	1 80	16	.1562	5	2 25	21	.1968
$\frac{11}{64}$	2 00	18	.1718	$5\frac{1}{2}$	2 35	22	.2165
$\frac{3}{16}$	2 20	20	.1875	6	2 90	26	.2362
$\frac{13}{64}$	2 40	21	.2031	$6\frac{1}{2}$	3 15	28	.2559
$\frac{7}{32}$	2 65	23	.2187	7	3 65	32	.2756
$\frac{15}{64}$	2 90	26	.2343	$7\frac{1}{2}$	3 90	35	.2953
$\frac{1}{4}$	3 15	28	.25	8	4 20	37	.3149
$\frac{17}{64}$	3 40	30	.2656	$8\frac{1}{2}$	4 80	42	.3346
$\frac{9}{32}$	3 65	32	.2812	9	5 10	45	.3543
$\frac{19}{64}$	3 90	35	.2968	$9\frac{1}{2}$	5 40	48	.3740
$\frac{5}{16}$	4 20	37	.3125	10	5 70	50	.3937
$\frac{21}{64}$	4 50	40	.3281	$10\frac{1}{2}$	6 00	53	.4134
$\frac{11}{32}$	4 80	42	.3437	11	6 80	59	.4330
$\frac{23}{64}$	5 10	45	.3593	$11\frac{1}{2}$	7 20	63	.4527
$\frac{3}{8}$	5 40	48	.375	12	7 50	65	.4724
$\frac{25}{64}$	5 70	50	.3906	$12\frac{1}{2}$	8 00	70	.4921
$\frac{13}{32}$	6 00	53	.4062	13	10 00	85	.5118
$\frac{27}{64}$	6 40	55	.4218				
$\frac{7}{16}$	6 80	59	.4375				
$\frac{29}{64}$	7 20	63	.4531				
$\frac{15}{32}$	7 50	65	.4687				
$\frac{31}{64}$	7 75	67	.4843				
$\frac{1}{2}$	8 00	70	.5				

Special Note—We can furnish any make of High Grade Drills desired. Specify which make you want.

SET OF DRILLS.



Set No. A.....\$4.25

Jewelers' Set of 36 Drills,
largest size No. 30 ($\frac{1}{4}$
inch) down to No. 65, of
the steel wire gauge,
mounted in a mahogany
case with cap.

No. B case only, \$0.75 each

No. C. Metal Stand\$1.00

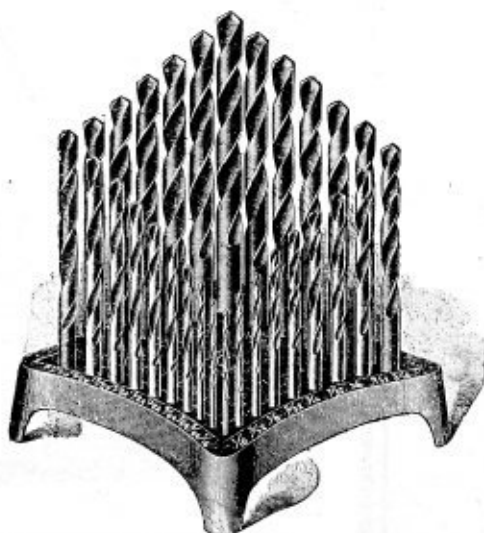
No. D. Wood Block35

These hold a set of drills Nos.
1 to 60 inclusive.

No. E. Metal Stand\$1.00

No. G. Wood Block35

These hold a set of drills
 $\frac{1}{16}$ " to $\frac{1}{2}$ " inclusive.



No. H. Short set straight shank drills, $\frac{1}{16}$ to $\frac{1}{2}$ inch by 64ths, mounted on
metal stands\$11.50

No. J. Short set straight shank drills $\frac{1}{16}$ to $\frac{1}{2}$ inch by 64ths, mounted on
maple blocks 10.00

No. K. Short set straight shank drills $\frac{1}{16}$ to $\frac{1}{2}$ inch by 32ds, mounted on
maple blocks 5.40

No. L. Straight shank drills, letter size A to Z, mounted on maple blocks. . 10.00

No. M. Wire gauge drills No. 1 to No. 60, mounted on metal stands. 9.75

No. P. Wire gauge drills No. 1 to No. 60, short set straight shank drills $\frac{1}{4}$
to $\frac{3}{8}$ inch by 32ds, mounted on maple blocks. 9.90

No. R. Wire gauge drills No. 1 to No. 60, mounted on maple blocks. 8.10

No. T. Wire gauge drills alternate Nos. from 1 to 59, mounted on maple
blocks 4.30

Write your orders thus, viz.: "1 only No. C—173," or "1 set No. K—173."
This saves time and avoids error.

PUMP DRILLS.

Our Pump Drill fitted with an adjustable chuck, having three hardened jaws—these are held apart by springs.

Capacity of chuck 0 to $\frac{3}{32}$ inches.

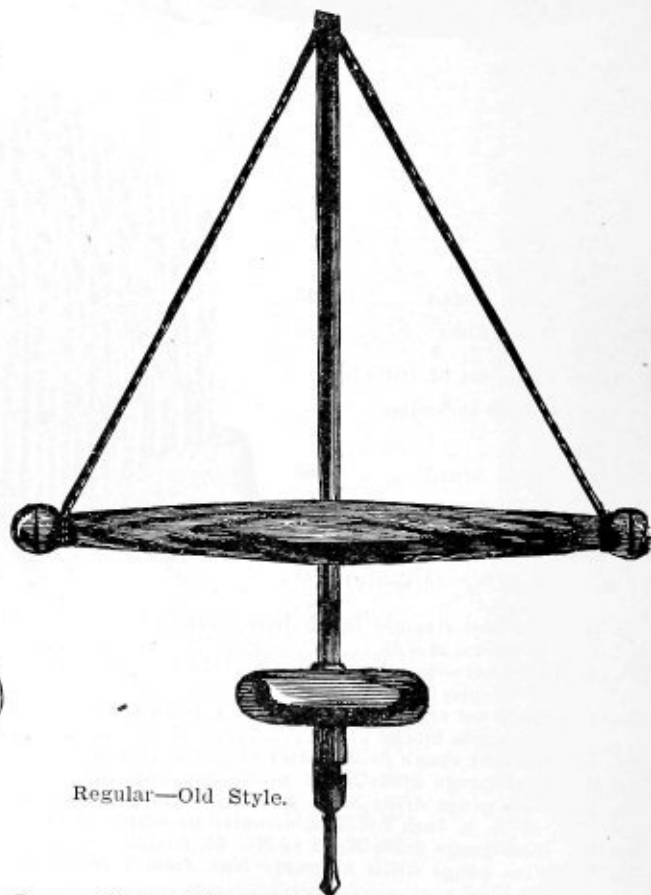
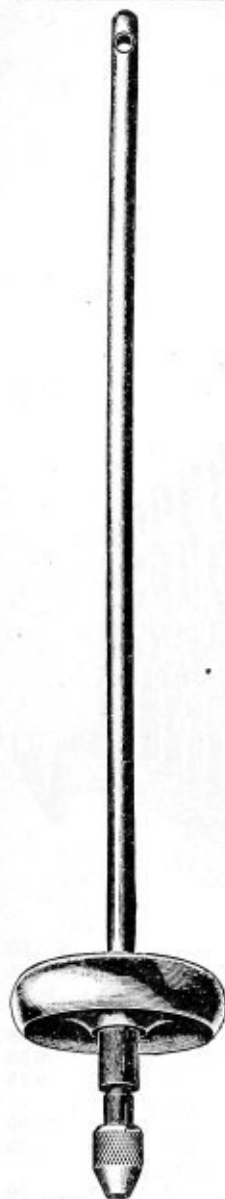
No. "A" has a 2" Balance Wheel

No. "B" has a $2\frac{1}{4}$ " Balance Wheel

No. "C" has a $2\frac{1}{2}$ " Balance Wheel

All Sizes, \$2 00 Each.

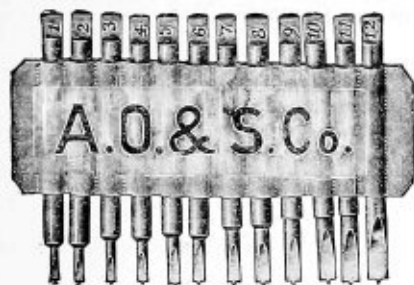
Price includes Wood Handle and Belt.



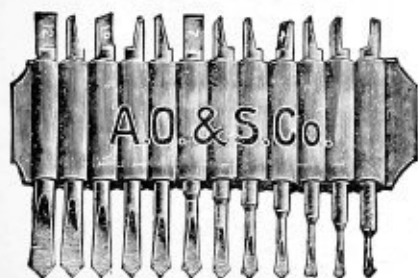
Regular—Old Style.

No. Each	D	E	G	H	J	K	L
Balance Wheel	$1\frac{1}{2}$ "	$1\frac{5}{8}$ "	$1\frac{3}{4}$ "	$1\frac{7}{8}$ "	2"	$2\frac{1}{4}$ "	$2\frac{1}{2}$ "
	\$1 00	\$1 00	\$1 25	\$1 25	\$1 25	\$1 50	\$1 50

JEWELERS' DRILLS.



SET "A"—PEARL DRILLS.
12 Drills mounted in a neat
leather case.
\$0 75



SET "B"—FLAT DRILLS.
12 Drills mounted in a neat
leather case.
\$0 50



No. "C."
AUTOMATIC
SPIRAL DRILL.
\$0 85



No. "D."
PLAIN SPIRAL
DRILL.
\$0 25



No. "E." \$0 25 each.

When ordering do not forget the new method, viz.: 3 Sets "A"-175.
By using this method error is avoided.

Order by respective number and be sure to affix page number also.

HOLTZER-CABOT UNIVERSAL ELECTRIC DRILL.

For Direct or Alternating Current.

Ready to attach to any lamp socket.

It carries drills up to $\frac{5}{16}$ " in diameter.Distance from table to chuck jaws, $3\frac{1}{2}$ " maximum.

Speed easily varied by means of shifting belt on top.

This outfit may be used for a great variety of miscellaneous drilling.

Dimensions: Height, 20" maximum; width, 9"; depth, 11"; depth of throat, $3\frac{1}{8}$ ".

Radial attachment by which the drill head may be swung across the face of the platin or entirely off it.

The following combinations of speed variation obtainable: 800 to 1600 with one intermediate speed; or 1200 to 2700 with one intermediate speed. In ordering state which is preferred.



ALL PRICES
SUBJECT TO
CHANGE WITHOUT
NOTICE.

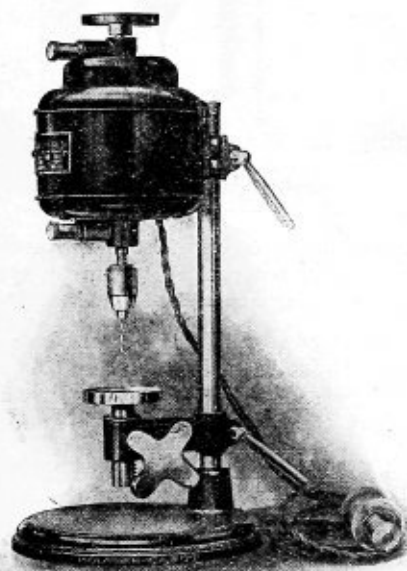
Number	H. P.	Speed	Frequency	Shipping Weight	Net Weight	Voltage	List Price
"A"		800-1600				110V. D.C.	\$125 00
"B"	$\frac{1}{4}$	or		75 lbs.	50 lbs.		
"C"		1200-2700				220V. D.C.	130 00
"C"		800-1600	60 or			110V. A.C.	125 00
"D"	$\frac{1}{4}$	or		75 lbs.	50 lbs.		
"D"		1200-2700	133 cycles			220V. A.C.	130 00
"E"						110V. A.C.	128 00
"E"	$\frac{1}{4}$	800-1600	40 cycles	75 lbs.	50 lbs.		
"G"						220V. A.C.	134 00

Order by respective number and be sure to affix the page number.

HOLTZER-CABOT ELECTRIC DRILL.

For Direct Current Only.

"This drill is designed for bench service for fine drilling and is portable, thereby making it possible to be operated in more than one department. It is built for direct current only of 110 or 220 volts and may be attached to any lamp socket, consuming only as much current as one or two incandescent lamps. Both the motor and table are adjustable and drills up to $\frac{1}{4}$ " may be used. The height varies from $14\frac{1}{8}$ " to $18\frac{3}{8}$ " according to the adjustment."



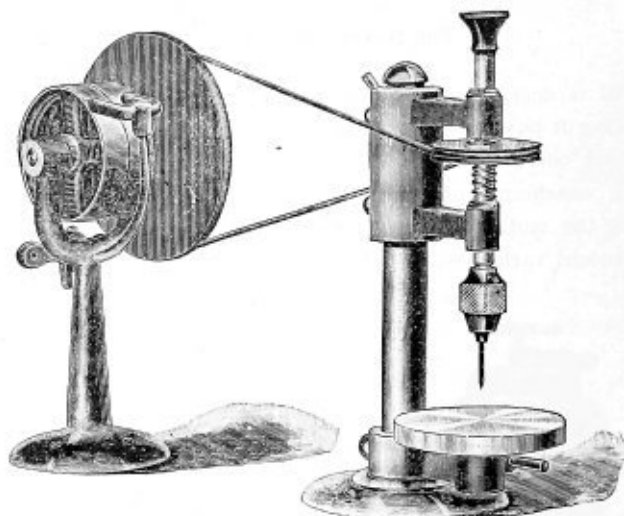
ALL PRICES
SUBJECT TO
CHANGE WITH-
OUT NOTICE.

PRICES:

Number.	Volts.	Frame.	Speed.	Shipping Weight.	List Price.
"H"	110	K $\frac{1}{8}$	1800-2000	75 lbs.	\$70 00 each
"J"	220	K $\frac{1}{4}$	1800-2000	75 lbs.	73 50 each

Please do not forget to always affix page number to every item number—by so doing we can handle your order quicker and you can check off your invoice without difficulty.

JEWELERS' DRILL.



This tool has many new features in its favor. The lower bracket is adjustable, permitting drilling at any angle, a necessary feature in cluster-work. Table can be removed and a hard-wood plug inserted instead.

Spindle as well as Bearings are made of the best tool steel, hardened, ground and lapped to a fit. Pressure is applied from top of spindle by bearing downward on knob, thus it is not only possible to do a greater amount of work, but the smallest drills can be used without danger of breaking them.

Will drill a hole $\frac{3}{4}$ of an inch deep. A coil spring causes spindle to rise when pressure is removed.

Top as well as lower brackets are adjustable, can be swung in either direction, or moved up and down in an instant, requiring neither wrench nor screw-driver.

Owing to fine adjustment, this drill is absolutely noiseless.

Almond Chuck No. 1, taking in drills from 0 to $\frac{3}{16}$ " in diameter is furnished with drill.

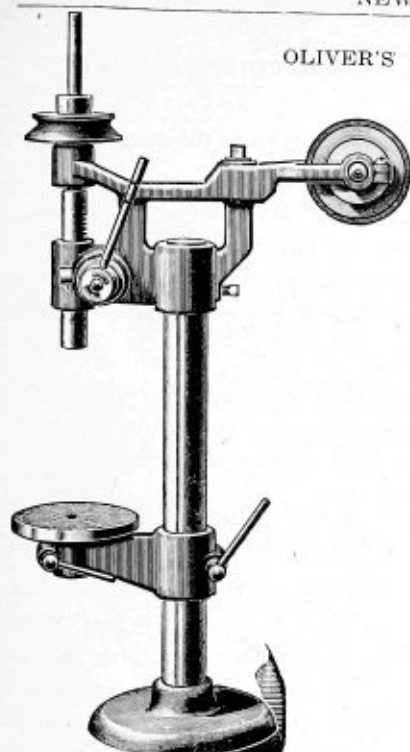
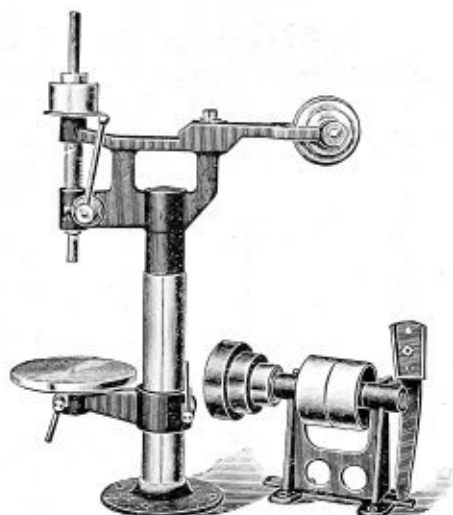
Space from center of table to column, two and a quarter inches ($2\frac{1}{4}$ ").
Height from bench to top of knob, fourteen inches (14").

Speed of bench counter should be about 600 revolutions per minute.

Price, complete with Gun Metal Bearings and Countershaft and Chuck \$27 50

Price, complete with Tempered Steel Bearings and Countershaft and
Chuck 30 00

OLIVER'S BENCH DRILLS.

No. 1 Capacity $\frac{3}{16}$ "No. 2 Capacity $\frac{5}{16}$ "

The Spindle is counterbalanced by a coil spring around the feed lever shaft.

Price, No. 1, with countershaft (Hanse), \$25 00.

Greatest distance between table and spindle—8".

Movement of spindle by feed lever— $1\frac{3}{4}$ ".

Diameter of table—4". Swing— $5\frac{1}{2}$ ".

Tight and loose pulleys on countershaft—4" in diam. for $1\frac{1}{4}$ " belt.

Speed of same—400 revolutions. Net weight—41 lbs.

Note—Countershaft has single grooved pulley.

No. 2 DRILL.

This drill is much heavier than our No. 1, though the same design is followed in its construction.

The Spindle has Morse No. 1 taper hole and is counterbalanced by a coil spring around the feed lever shaft.

The larger jewelry factories will find this drill better adapted to their work than the No. 1.

Price No. 2, with countershaft (Haik), \$45 00.

Greatest distance between table and spindle—12".

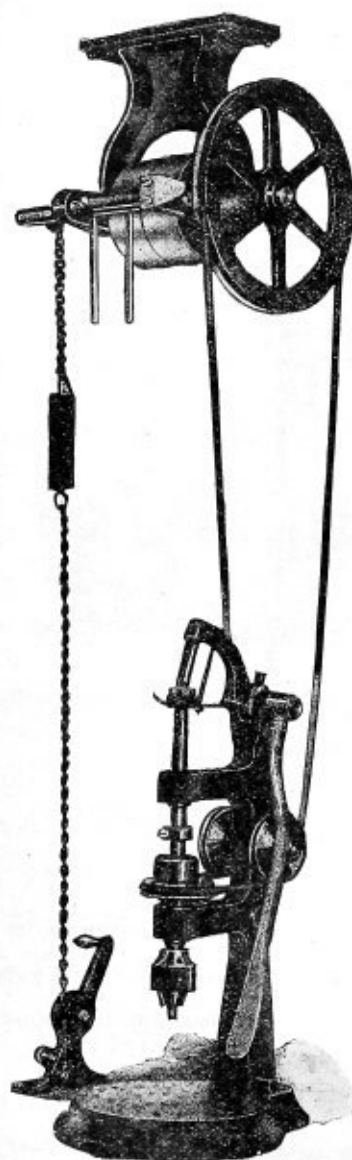
Movement of spindle by feed lever—3".

Diameter of table—9". Swing—10".

Tight and loose pulleys on countershaft—5" in diam. for 2" belt.

Speed of same—400 revolutions. Net weight—125 lbs.

THE BAILEY SENSITIVE BENCH DRILL AND COUNTERSHAFT.



Capacity $\frac{1}{8}$ " down to the finest size.

Designed for Manufacturing Jewelers and Instrument Makers, Optical, Metal Novelty, and Electrical Workers, and all requirements where accurate and fine drilling is necessary.

The fork spring at top prevents all vertical lost motion in the spindle (a very important necessity for fine drilling).

The Depth Stop is conveniently located above the driving pulley.

Attention is directed to the starting and stopping device. There is no long shifting lever to swing back and forth and to get loose. The operator starts and stops with a slight movement of the eccentric which is positive and handy at the left.

Crucible Steel Spindle.

Phosphor Bronze Spindle Sleeves.

Hardened Double Ball End Thrust.

Oil Retaining Shaft for Idler Pulleys.

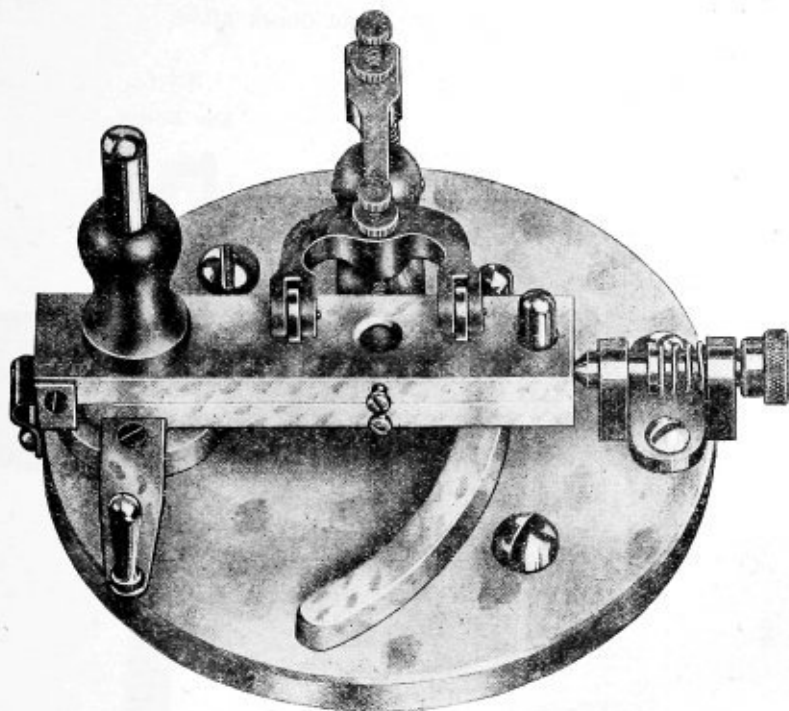
All parts strictly interchangeable.

Vertical Movement of Spindle.. $1\frac{1}{4}$ inch
 Diameter of Base..... 5 inches
 Height of Drill14 inches
 Weight complete with Countershaft 20 lbs.
 Round Belt $\frac{3}{8}$ or $\frac{1}{4}$ in.
 SpeedAbout 2,000
 Countershaft Pulleys3 in. and 6 in.

All bearings oiled from one cup.-Shifting
 Fingers are Reversible.

Drill Complete With Chuck and Countershaft \$32 50 Net.

PEARL DRILLING ATTACHMENT.



This Pearl Drilling Attachment is designed to fit the Bailey Sensitive Drill. It will handle Pearls from one-fifteenth grain to the largest with equal accuracy.

With very little experience an operator can work it to perfection, as it is almost automatic in action.

All shapes, such as Wing and Baroques, can easily be drilled as well as round, button and pear shape.

The pearl is held between two bushings which are tapered, thereby centering perfectly. The upper bushing which guides the drill is hardened steel; the lower one is brass.

A coil spring regulates the clamping pressure, which makes it impossible to break a pearl.

Drills made of needles, ground flat $\frac{1}{4}$ inch from the "eye" end and backed off on the edges are recommended, as they are made quickly and cut more freely than twist drills.

If you have pearls to drill, this attachment is what you have been looking for. Ask the man who has one.

Pearl Drilling Attachment Only, Price \$42 50 Net

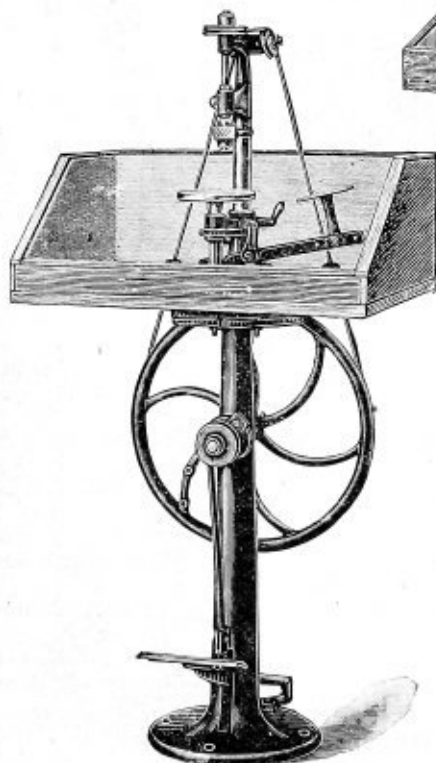
SENSITIVE DRILLING MACHINES

Furnished with $\frac{5}{16}$ " Almond Chuck fitted.

Both of these machines are fitted with a zinc lined box $17\frac{3}{4}$ "x $28\frac{3}{4}$ ".

No. 3.

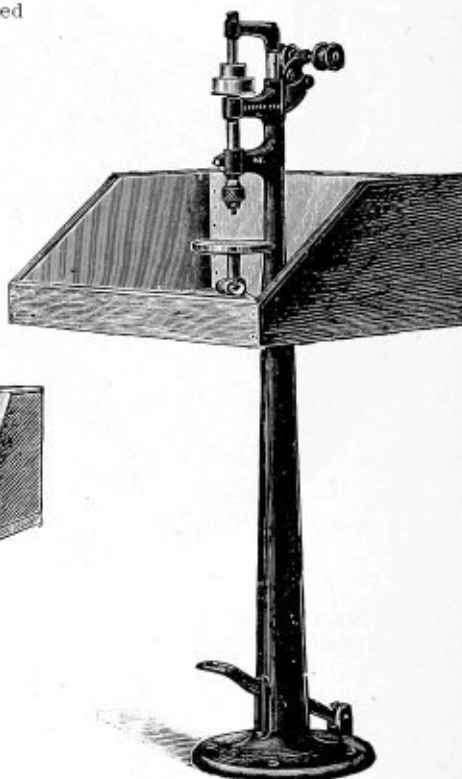
For Foot Power.



Price complete as shown \$40 00.

No. 4.

For Power.



Price complete as shown including countershaft \$40 00.

Details for both machines.

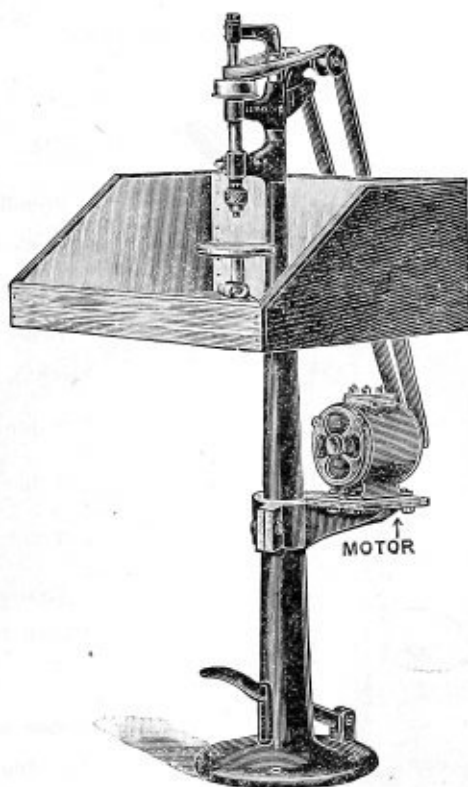
Table is 6" diameter.

Table to chuck 4".

Movement of spindle $1\frac{1}{2}$ ".

NO. 2 SENSITIVE DRILL.

Fitted with a Shelf for an Electric Motor.



This is the most reliable motor driven Drill, for the reason that the possibility of injury to the motor is greatly lessened, as the strain is absorbed by the drill press and belt, thus protecting the motor. A Water Motor can also be used to furnish power. Countershafts are furnished when required.

The Drill Press is a most practical machine, as the use of the foot feed while drilling, allows the operator to use both hands in holding the work, which is very essential where the articles are small or irregular in shape.

The Box is $17\frac{1}{4} \times 28\frac{3}{4}$ " , zinc lined and a No. 2 G Almond chuck is fitted to spindle.

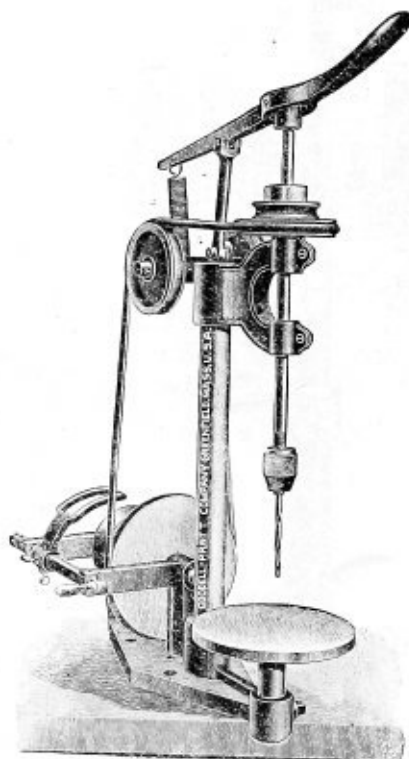
Price \$38 50.

The price includes Almond Chuck Fitted (size $0\frac{5}{16}$ "), but does not include the Electric Motor nor the Belt.

POWER BENCH DRILL.

No. 12.

Good Quality—Moderate Price.



Spindle movement, $3\frac{1}{4}$ inches, or can be set for any less length.

Drills to center of $6\frac{1}{4}$ " circle.

Table Diameter, $4\frac{7}{8}$ ".

Table adjustment, $2\frac{1}{4}$ ".

Total height, 24".

Extreme distance from Chuck to table, 8".

Diameter

Loose pulley 3"

1st step $3\frac{1}{2}$ "

2d step $4\frac{1}{2}$ "

It is equipped with a Three-Jawed Chuck, capacity 0 to $\frac{1}{4}$ inch, an Adjustable Table and an Adjustable Spindle.

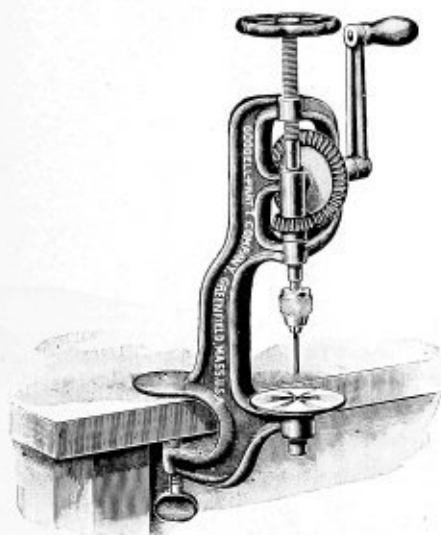
Price, each, (Laxill) \$15 00

Each machine packed in a wooden box, $20\frac{1}{2}$ "x17"x8".

Shipping weight, 30 pounds.

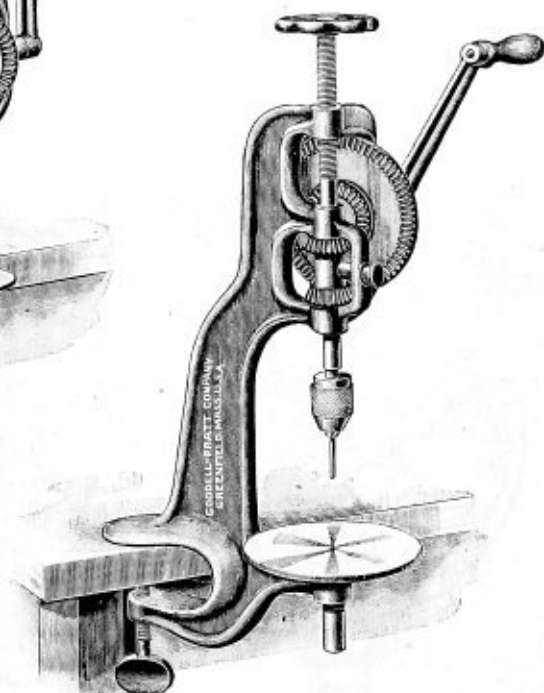
BENCH DRILLS.

Solid Iron Frame, Cut Gears, Steel Feed Screw, and Adjustable Table, all well made and nicely fitted,



(8)

Capacity 0 to $\frac{1}{4}$ ", \$5 00



(9)

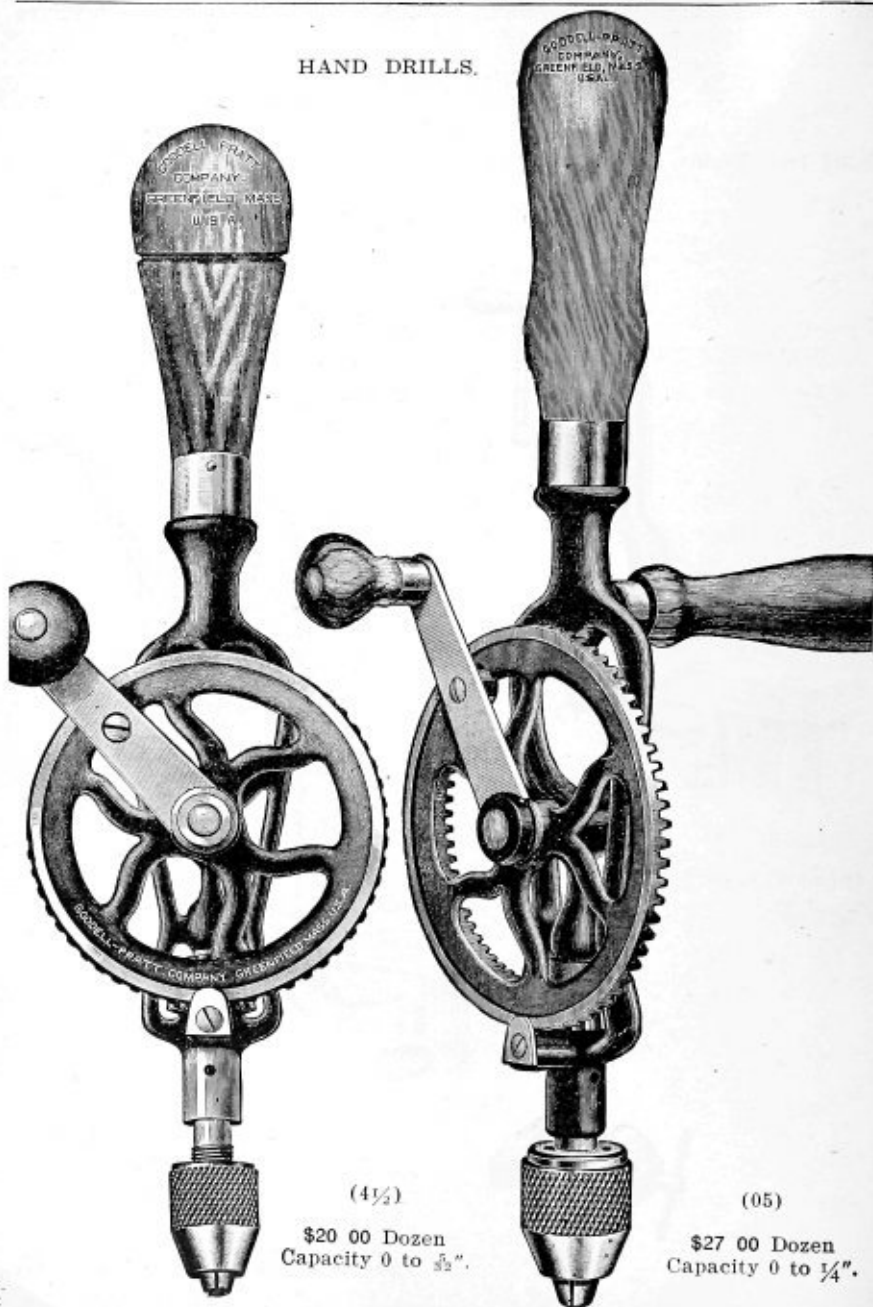
Capacity 0 to $\frac{3}{8}$ ", \$8 00



Vise for No. 8, \$1 50

Vise for No. 9, 2 00

HAND DRILLS.



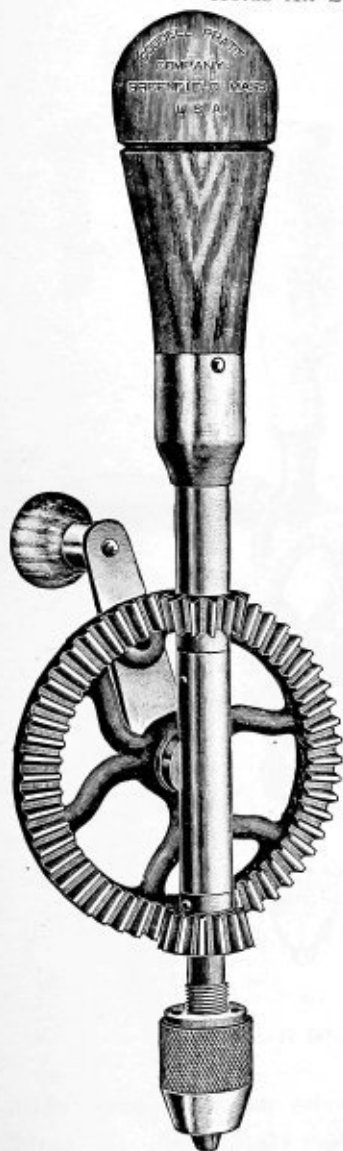
(4 1/2)

\$20 00 Dozen
Capacity 0 to $\frac{3}{8}$ ".

(05)

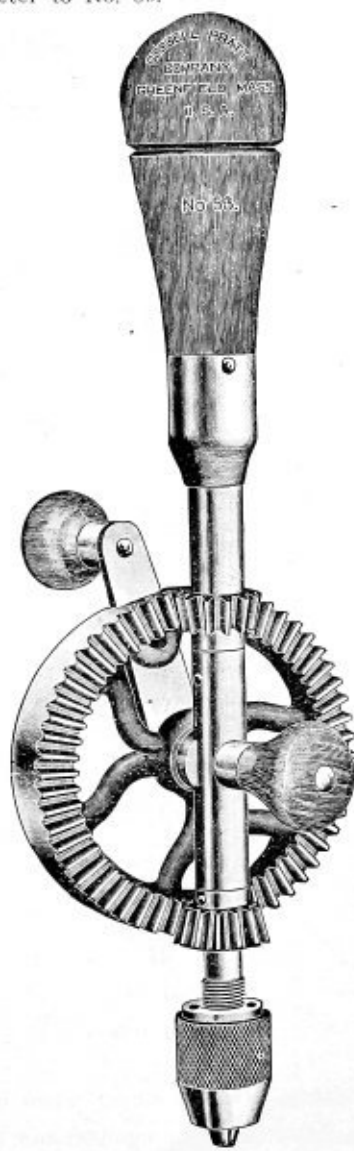
\$27 00 Dozen
Capacity 0 to $\frac{1}{4}$ ".

HAND DRILLS.

Holds All Sizes $\frac{5}{32}$ " Diameter to No. 80.

(52)

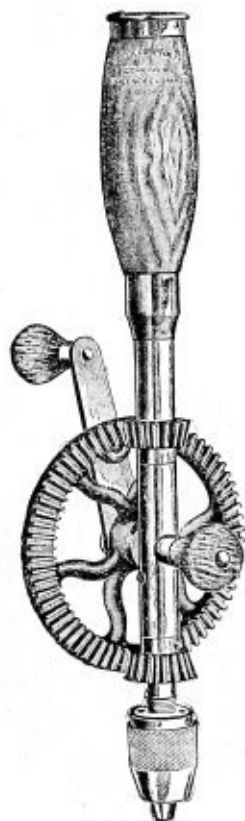
\$22 00 Dozen



(53)

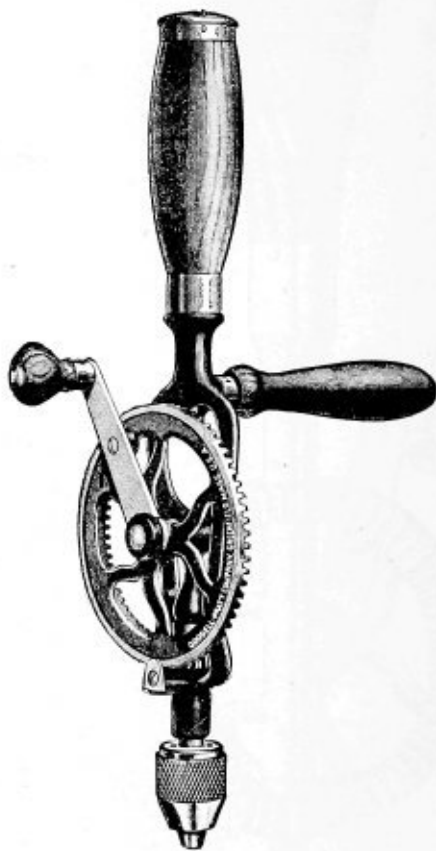
\$24 00 Dozen

HAND DRILLS.

Holds Drills $\frac{1}{4}$ " to No. 80.

No. 54.

\$32 00 Dozen.



No. 5.

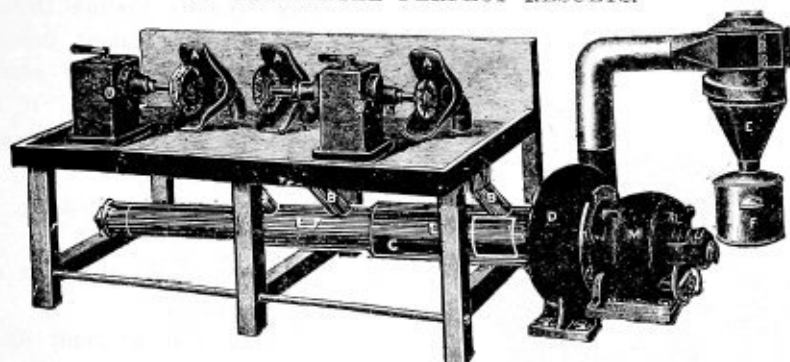
\$36 00 Dozen.

Notice—Do not forget when ordering to employ our new system which combines the item number and the page number, viz.: 1 only No. 54-188.

"It saves time."

DUST COLLECTING SYSTEM.

WE GUARANTEE PERFECT RESULTS.



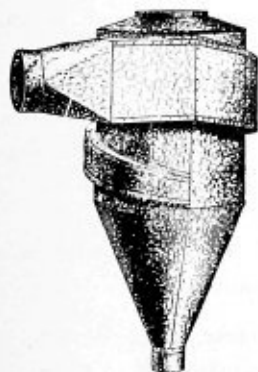
By the use of this system every particle (of polishing material, also lint, that will come from the polishing wheels) can be collected in a **perfectly dry state** through the collector "E" and deposited in the metal can "F," which is made to fit tightly onto the neck of the collector.

The above illustration is to show how the system should be installed to procure the most satisfactory results.

The hoods "A," and pipes "B" and "C" should be made as shown.

This system is **ahead** of all others, because it is **positively sanitary**.

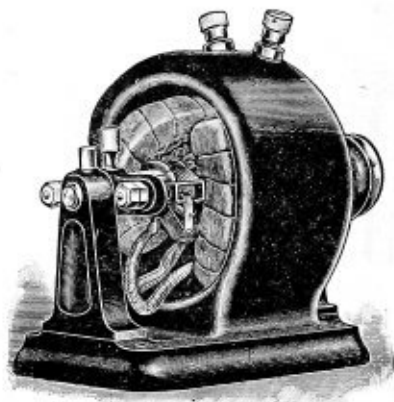
We sell only the collector "E" as per lists below, unless a special request is made for complete outfit. But the can "F," the fan "D" and the heads are machines that customers may have or prefer to purchase elsewhere. The bench can be made by any carpenter and the piping made and installed by any tinsmith. Our aim by the above illustration is to assist in the details necessary for the **best results**.



COLLECTOR.

No.	Price	Will take care of	Diam. of inlet	Diam. of collector
1	\$27.50	3 wheels	5"	15"
2	34.50	6 "	6"	16"
3	37.50	10 "	8"	20"
4	41.25	16 "	9"	24"
5	45.50	24 "	11"	30"
6	51.50	30 "	13"	32"
7	60.00	36 "	15"	36"
8	68.75	42 "	17"	42"
9	86.00	50 "	19"	46"
10	103.00	65 "	21"	52"

JEWELER'S NO. 1 PLATING DYNAMO.



The Oliver Quality Plating Dynamo No. 1 represents the highest development in the design of small plating dynamos sold at a low price. It has many features found only in the larger and higher priced machines.

In general its design is pleasing, yet very sturdy.

The field coils are form wound and are carefully insulated.

The armature core is built up of steel laminations which insures the dynamo against heating and the subsequent loss of power.

The commutator is an improvement over the commutator usually found on machines of this character. It is built up of drawn copper segments, carefully insulated by mica from each other and

from the shaft. This construction helps eliminate sparking and is conducive of very smooth running. The commutator usually furnished with this class of machines consists of brass or copper tubing slotted but without insulation between the segments. These open slots become filled with dirt and particles of the brushes causing short circuits, thus greatly diminishing the capacity of the machine. This style of commutator is very liable to become rough, a very undesirable condition.

The brush holders are of an improved type. They are very simple and durable and of such a design that the pressure on the brushes is practically constant, no matter how much the brushes may wear. They are also adjustable for regulation. The brushes are built up of copper gauze.

The bearings are of bronze and are lubricated by dust-proof oilers.

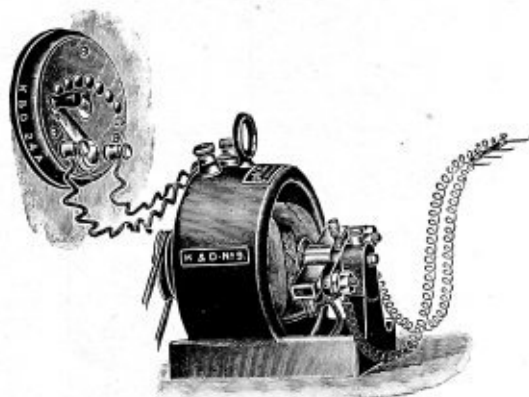
This machine is furnished complete with pulley ready for operation and will develop eight amperes at 2,000 revolutions per minute.

Weight, 10 lbs. Code word, Involute.

Price, \$8 00.

JEWELER'S PLATING DYNAMO.

Illustration Shows Same Properly Set up—for Use.



Dynamos, only \$8 00

Rheostat, only 1 00

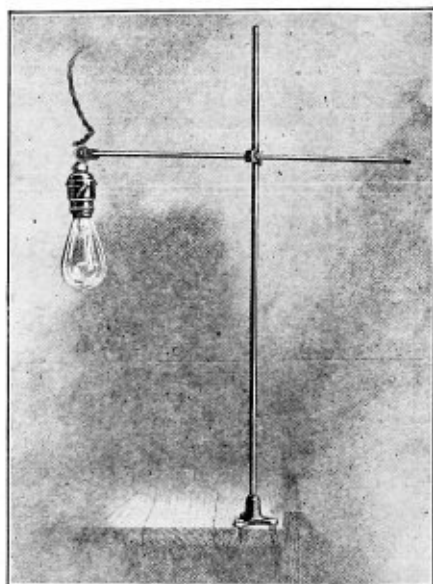
N. B.—Above prices do not include a plating tank, nor do we undertake to furnish the tanks. There are many substitutes for glass, to contain the plating solution, that are equally serviceable, much less costly and less likely to get broken.

The Dynamo is carefully constructed for real service. The armature is laminated; slot wound. Brushes of woven wire; the holders being of radial type on adjustable yoke.

The field is of the ring type, cast solid with the frame. Coils are form wound.

R.P.M., 2200. Volts, 2. Amperes, 6. Weight, 9 lbs.
Length of shaft, 6 inches. Diameter of pulley, $1\frac{1}{2}$ inches; width, $\frac{3}{4}$ inch.
Space occupied, $6 \times 4\frac{1}{4} \times 6$ inches. Finely finished in black enamel.

THE "CLIMAX"
ADJUSTABLE ELECTRIC LIGHT SUPPORT.
For Factory Use.



No. 1 Price, per Dozen.....\$9 00

Light is an important factor to the workman and the proper thing to hold it where it is desired is the "Climax" Patent Adjustable Electric Light Support. It is attachable to rear of bench, or to the wall, swinging out of the way when not in use. It does not require any wiring to attach. By simply clamping to the socket it is ready for use. Prevents breakage of globes and wearing of insulation. Saves time and annoyance caused by strings and wire tied to lamps. The "Climax" Support puts it there, at any angle, in a second. Made of steel, oxidize finish. Will last a life time. The lowest priced support on the market. Extreme height, 2 feet. Extension, 18 inches.

Remember—Simply write your order thus:

1 only No. 1-192.

EMERY



Genuine Wellington Mills "London Ground"

Nos. 8, 9, 10, 12, 14, 16, 18, 20, 24, }
 30, 36, 40, 46, 54, 60, 70, 80, 90, 100, } All grades 15c per lb.
 110, 120, 150. }

Fine Flour and Superfine Washed Flour Grades.

All numbers in full kegs weighing from 200 to 250 lbs. at 10c per lb.

Fine Flour Grade in full kegs, 200 lbs., approximately, at 8c per lb.

Superfine Washed Flour, in full kegs weighing from 120 to 150 lbs., at 14c per lb. Smaller quantities, 25c per lb.

Pure Turkish Emery

	GRAIN		FLOUR
	Nos. 4 to 46 inclusive.	Nos. 54 to 180 inclusive.	C. F., F. and F. F.
In kegs of about 350 lbs.,	at 5 cts. per lb.	5½ cts. per lb.	3½ cts. per lb.
½ kegs of about 175 lbs.,	at 5¼ cts. per lb.	5¾ cts. per lb.	3¾ cts. per lb.
¼ kegs of about 90 lbs.,	at 5½ cts. per lb.	6 cts. per lb.	4 cts. per lb.
10 lb. tin cans, 10 in case,	at 6½ cts. per lb.	7 cts. per lb.	6 cts. per lb.
Less quantity,	at 10 cts. per lb.	10 cts. per lb.	8 cts. per lb.

Imported Lap Emery

Original cases weighing 55 lbs. each at 20c per lb.

Smaller quantities at 25c per lb.

EMERY CLOTH AND PAPER.

HUBERT'S GENUINE FRENCH EMERY PAPER.

Per 1000 sheets	Rouge \$25 00	No. 4-0 \$22 50	Nos. 3-0 to 4 \$15 00
Per 100 sheets	Rouge 2 50	No. 4-0 2 25	Nos. 3-0 to 4 1 50
Per dozen sheets	Rouge 35	No. 4-0 30	Nos. 3-0 to 4 20

NEW ENGLAND BRAND.

CLOTH

Sheets 9x11 inches.

Quire Packages.

Nos.	
FF	\$26 50 per ream
F or 00	26 50 per ream
120 or 0	26 50 per ream
100	26 50 per ream
90 or 1/2	26 50 per ream
80 or 1	28 50 per ream
70 or 1 1/2	29 75 per ream
60 or 2	30 75 per ream
54 or 2 1/2	33 00 per ream
46 or 3	35 25 per ream
40 or 3 1/2	37 50 per ream
Assorted	28 50 per ream
Crocus Cloth	26 50 per ream

PAPER

Sheets 9x11 inches.

Half Ream Packages.

Nos.	
000	\$ 9 25 per ream
00	9 25 per ream
0	9 25 per ream
1/2	9 25 per ream
1	11 00 per ream
1 1/2	11 50 per ream
2	12 25 per ream
2 1/2	14 00 per ream
3	16 50 per ream
3 1/2	19 25 per ream
Assorted	11 50 per ream

BAEDER, ADAMSON & CO.

Per Ream—In sheets 9x11 inches.

EMERY PAPER.	No. 00	No. 0	No. 1/2	No. 1	No. 1 1/2
	\$9 25	\$9 25	\$9 25	\$11 00	\$11 50
	No. 2	No. 2 1/2	No. 3	No. 3 1/2	Ass'd
	\$12 25	\$14 00	\$16 50	\$19 25	\$11 50

EMERY CLOTH.	No. 000	No. 00	No. 0	No. 100	No. 1/2	No. 1
	\$26 50	\$26 50	\$26 50	\$26 50	\$26 50	\$28 50
	No. 1 1/2	No. 2	No. 2 1/2	No. 3	No. 3 1/2	Ass'd
	\$29 75	\$30 75	\$33 00	\$35 25	\$37 50	\$28 50

Crocus Cloth \$26 50 per ream.

H. H. BARTON & SON CO.

EMERY CLOTH.

Per Ream, 9 in. by 11 in.

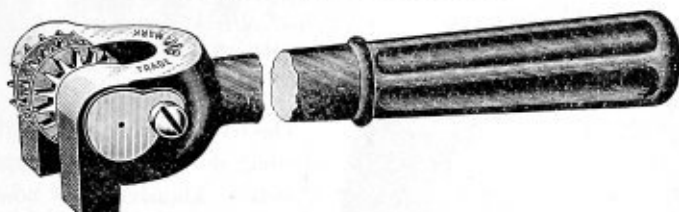
Nos. FF to 1/2 and Crocus..	\$18 00
No. 1	20 00
No. 1 1/2	21 00
No. 2	22 00
No. 2 1/2	23 00
No. 3	24 00

EMERY PAPER.

Per Ream, 9 in by 11 in.

Nos. 00 to 1/2.....	\$ 6 00
No. 1	7 00
No. 1 1/2	7 50
No. 2	8 00
No. 2 1/2	9 00
No. 3	10 50

EMERY WHEEL DRESSERS.



Cutters Milled and Hardened.

Hardened Steel Bearings.

No. 40	Complete Tool, with 1 extra set of Cutters.....	\$0 75
No. 41	Extra Cutters, per set	10

DIAMOND HAND TOOLS.



The Hand Tool consists of a piece of round Bessemer steel, $\frac{3}{4}$ inch diameter or larger, according to size and shape of carbon point, fitted with a suitable wooden handle, and is about 12 inches over all.

No. 0	\$ 1 50	For very small wheels up to $2\frac{1}{2}$ " in diameter
No. 1	5 00	For emery wheels $6" \times \frac{3}{4}"$ of No. 60 Grain or finer
No. 2	8 00	For emery wheels $6"$ to $8" \times 1\frac{1}{2}"$ No. 60 Grain or finer
No. 3	10 00	For emery wheels $8"$ to $10" \times 2"$ No. 60 Grain or finer
No. 4	12 00	For emery wheels $10" \times 2"$ of No. 36 to 54 Grain
No. 5	15 00	For emery wheels $10"$ to $12"$ of No. 36 Grain or finer
No. 6	18 00	For emery wheels $12"$ to $16"$ of No. 36 Grain or finer
No. 7	20 00	For emery wheels $16"$ to $20"$ of No. 36 Grain or finer

Prices for larger tools upon request.

Note.—Small tools or points will not stand on heavy work.

THE DIAMO-CARBO DRESSERS.



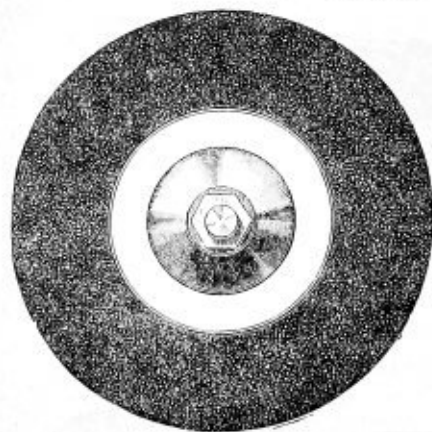
This tool will dress any kind of a wheel that is used for tool grinding.

No. 30	is 10 inches long.	Price each.....	\$3 50
No. 50	is 12 inches long.	Price each.....	4 00

Note.—Do not fail to affix this page number to the item number, viz.:
1 only No. 4-195.

This tells us exactly what you want.

EMERY WHEELS.



ODD, REGULAR AND SPECIAL SHAPES.

The term "Emery Wheel" is fast becoming obsolete, because other, Better Grinding Abrasives are now used in place of Emery. We supply the Best Wheels Made. Send us your orders and we guarantee to give you the Very Best Service.

Do not expect one wheel to do all sorts of grinding.

In ordering wheels for the first time, please give the following particulars (subsequent orders can be filled by referring to previous transactions, as full record is kept of all wheels made):

1. Diameter and thickness of each wheel.
2. Diameter of shaft on which each wheel will be mounted.
3. Say whether the wheels are to grind surfaces or edges.
4. Nature of the metal to be ground—wrought or cast iron, steel or brass, etc.
5. Describe the work to be done by each wheel—coarse, medium, fine, etc.
6. Speed of mandrel.
7. Say whether the work is to be held by the hand or held mechanically and fed up to the wheel.
8. Give the shape of face. If other than square send sketch.

List Prices on Opposite Page.

EMERY BRICKS AND RUB STONES.

Bricks—Oblong.			Sticks (Rd., Sq. or Tri.)		
No.	A	Sizes	Each	No.	1
"	B	8x2x1.....	\$0 57	"	2
"	C	8x3x1.....	76	"	3
"	D	8x2x2.....	1 00	"	4
"	E	8x3x2.....	1 40	"	5
"	G	8x4x2.....	2 00		
"	H	8x4x3.....	2 40		
"	J	10x3x1.....	4 10		
"	K	12x3x1.....	1 25		
"	L	12x4x1.....	1 50		
			2 10		

When ordering these always specify whether fine, medium or coarse grades are wanted.

PRICE LIST OF EMERY WHEELS

Diam Inch	THICKNESS OF WHEELS IN INCHES																Diam Inch
	1-4	3-8	1-2	5-8	3-4	7-8	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	3	3 1/4	3 1/2	
1	\$ 25	\$ 30	\$ 30	\$ 35	\$ 35	\$ 40	\$ 40	\$ 45	\$ 50	\$ 55	\$ 60	\$ 65	\$ 70	\$ 75	\$ 80	\$ 85	1
1 1/2	30	35	40	45	45	50	50	55	60	65	70	75	80	85	90	1 00	1 1/2
2	35	45	50	55	55	60	60	65	70	75	80	85	90	95	1 00	1 05	2
2 1/2	40	55	65	70	75	80	85	95	1 05	1 15	1 25	1 35	1 45	1 55	1 65	1 75	2 1/2
3	50	65	80	90	95	1 05	1 10	1 25	1 40	1 55	1 70	1 85	2 00	2 15	2 30	2 45	3
3 1/2	60	80	95	1 05	1 15	1 25	1 35	1 55	1 75	1 95	2 15	2 35	2 55	2 75	2 95	3 15	3 1/2
4	75	95	1 10	1 25	1 35	1 50	1 60	1 85	2 10	2 35	2 60	2 85	3 10	3 35	3 60	3 85	4
4 1/2	90	1 10	1 25	1 40	1 55	1 70	1 85	2 15	2 45	2 75	3 05	3 35	3 65	3 95	4 25	4 55	4 1/2
5	1 00	1 20	1 40	1 60	1 80	2 00	2 20	2 60	3 00	3 40	3 80	4 20	4 60	5 00	5 40	5 80	5
6	1 40	1 60	1 75	2 10	2 40	2 75	3 05	3 70	4 35	5 00	5 75	6 30	6 95	7 60	8 25	8 90	6
7	1 85	2 00	2 15	2 60	3 00	3 45	3 85	4 70	5 55	6 40	7 25	8 10	8 95	9 80	10 65	11 50	7
8	2 10	2 35	2 60	3 10	3 60	4 10	4 60	5 60	6 60	7 60	8 60	9 60	10 60	11 60	12 60	13 60	8
9	2 50	2 80	3 10	3 70	4 25	4 85	5 40	6 55	7 70	8 85	10 00	11 15	12 30	13 45	14 60	15 75	9
10	3 00	3 35	3 65	4 35	5 00	5 70	6 35	7 70	9 05	10 40	11 75	13 10	14 45	15 80	17 15	18 50	10
12	3 60	3 80	4 05	5 00	6 00	6 70	7 40	9 00	10 70	12 75	14 00	15 70	17 40	19 00	20 75	22 50	12
14	4 05	4 55	5 05	5 75	6 75	7 45	8 15	10 00	11 75	13 75	15 75	17 75	19 75	21 75	23 75	25 75	14
16	4 50	5 00	5 50	6 25	7 25	8 00	8 75	10 75	12 75	14 75	16 75	18 75	20 75	22 75	24 75	26 75	16
18	5 00	5 50	6 00	6 75	7 75	8 50	9 25	11 25	13 25	15 25	17 25	19 25	21 25	23 25	25 25	27 25	18
20	5 50	6 00	6 50	7 25	8 25	9 00	9 75	11 75	13 75	15 75	17 75	19 75	21 75	23 75	25 75	27 75	20
22	6 00	6 50	7 00	7 75	8 75	9 50	10 25	12 25	14 25	16 25	18 25	20 25	22 25	24 25	26 25	28 25	22
24	6 50	7 00	7 50	8 25	9 25	10 00	10 75	12 75	14 75	16 75	18 75	20 75	22 75	24 75	26 75	28 75	24
26	7 00	7 50	8 00	8 75	9 75	10 50	11 25	13 25	15 25	17 25	19 25	21 25	23 25	25 25	27 25	29 25	26
28	7 50	8 00	8 50	9 25	10 25	11 00	11 75	13 75	15 75	17 75	19 75	21 75	23 75	25 75	27 75	29 75	28
30	8 00	8 50	9 00	9 75	10 75	11 50	12 25	14 25	16 25	18 25	20 25	22 25	24 25	26 25	28 25	30 25	30
32	8 50	9 00	9 50	10 25	11 25	12 00	12 75	14 75	16 75	18 75	20 75	22 75	24 75	26 75	28 75	30 75	32
34	9 00	9 50	10 00	10 75	11 75	12 50	13 25	15 25	17 25	19 25	21 25	23 25	25 25	27 25	29 25	31 25	34
36	9 50	10 00	10 50	11 25	12 25	13 00	13 75	15 75	17 75	19 75	21 75	23 75	25 75	27 75	29 75	31 75	36

All wheels thinner than 1/4 inch are subject to same list price as wheels of that thickness.

JEWELER'S FINE ENAMELS.

OPAQUE COLORS.

BLUE.

No.		Per. oz.	Per. lb.
8	Deep	\$1 00	\$ 8 00
10	Very Dark	1 25	10 00
11	Deep Lapis	1 00	8 00
12	Deep	1 25	10 00
13	Navy Light	1 00	8 00
14	Navy Hard	1 25	10 00
15	Navy	1 00	8 00
18	Lapis	1 00	9 00
19	Lapis Hard	1 25	10 00

GREEN.

25	Ivy	\$1 25	\$10 00
26	Dartmouth	1 50	12 00
27	Pea	1 25	10 00
28	Orient	1 25	10 00
29	Grass	1 25	10 00
30	Apple	1 25	10 00
31	Myrtle	1 25	10 00
32	Pine	1 50	12 00
33	Pine No. 2	1 50	12 00
34	Dark	1 25	10 00
35	Sarsenet	1 25	10 00
36	Stone	1 50	12 00
37	Clover	1 25	10 00
40	Rose Leaf	1 25	10 00
42	Nile	1 25	10 00
44	Deep Olive	1 50	12 00
45	Olive	1 50	12 00

ROSE PINK.

51	Rose	\$2 50	\$20 00
52	Pale Pink	2 50	20 00
53	Rose	2 50	20 00
56	Deep Rose	2 50	20 00
67	Violet	2 00	16 00
68	Heliotrope	2 00	16 00
69	Lilac	2 00	16 00

GREY.

91	Georgetown	\$1 50	\$12 00
92	Pale	1 50	12 00
93	Vassar	1 50	12 00
94	Silver	1 50	12 00
96	Grey No. 1	1 50	12 00
97	Grey No. 2	1 50	12 00
98	Stevens	1 50	12 00
99	Cadet	1 50	12 00

BROWN.

No.		Per. oz.	Per. lb.
71	YELLOW	\$1 50	\$12 00
72	Sepia	1 50	12 00
73	Stone	1 50	12 00
74	Chocolate	1 75	14 00
75	Stone Light	1 50	12 00
76	Brown No. 2	1 50	12 00
77	Fawn	1 75	14 00
79	Brick Red	1 50	12 00

WHITE.

80	Soft	\$1 00	\$8 00
81	Painting	1 25	9 00
82	Acid Color	1 25	9 00
83	Silver	1 00	8 00
84	Hard	1 00	8 00

BLACK.

101	ACID Color	\$1 25	\$10 00
103	Polishing	1 25	9 00
105	Soft	1 25	9 00
107	Dead Finish	1 25	9 00

TURQUOISE.

110	Turquoise	\$1 25	\$9 00
111	Turquoise	1 25	9 00
113	Turquoise	1 25	9 00
115	Turquoise Pale	1 25	9 00
120	Turquoise	1 25	9 00

YELLOW.

144	Ivory	\$1 50	\$11 00
146	Canary	1 75	14 00
147	Citron	1 50	12 00
148	Princeton	1 50	12 00
149	Orange	1 75	14 00
150	Lemon	1 50	12 00
154	Cream	1 50	12 00

LAVENDER.

129	Mauve	\$1 50	\$12 00
134	LAVENDER	1 25	10 00
135	Lavender No. 2	1 25	10 00
136	Lavender Deep	1 25	10 00
137	Lavender	1 25	10 00
138	Lavender Medium	1 25	10 00

JEWELER'S FINE ENAMELS.

TRANSPARENT COLORS.

GREEN.

No.		Per. oz.	Per. lb.
231	Emerald	\$1 25	\$10 00
232	Olive	1 25	10 00
233	Deep Olive	1 25	10 00
234	Yellow Light	1 25	10 00
235	Dark	1 50	12 00
236	Pistache	1 25	10 00
237	Yellow	1 25	10 00
238	Moss Light	1 25	10 00
239	Leaf Dark	1 50	12 00
240	Empire	1 25	10 00
241	Emerald Pale	1 25	10 00
242	Pine Dark	1 50	12 00
243	Sea No. 1	1 50	12 00
245	Deep Sea	1 50	12 00
246	Deep Moss	1 50	12 00
247	Water	1 50	12 00
248	Peacock	1 50	12 00
249	Nile	1 25	10 00

BLUE.

251	Sky	\$1 25	\$10 00
252	Azure	1 25	10 00
253	Empire	1 50	12 00
254	Royal Deep No. 1..	1 50	12 00
255	Royal No. 2	1 50	12 00
256	Deep No. 16	1 50	12 00
257	Yale	1 50	12 00
258	Pale	1 25	10 00
259	Royal Light No. 3..	1 50	12 00
260	Pale	1 50	12 00
261	Greek	1 50	12 00
263	Peacock	1 50	12 00

LAVENDER.

361	Lilac	\$1 75	\$14 00
364	Lavender	1 75	14 00

OPAL.

312	Milky	\$1 75	\$14 00
315	Clear Hard	1 50	12 00
316	White No. 1	1 50	12 00
317	Special	1 50	12 00
318	Clear Soft	1 50	12 00
319	White No. 2	1 75	14 00
320	White	2 00	16 00
321	Rose Soft	2 00	16 00
322	Rose	2 00	16 00
323	Rose	2 00	16 00
324	Rose	2 25	18 00
325	Old Rose	2 25	18 00
326	Deep Rose	2 50	20 00
351	Blood Orange	3 00	24 00

YELLOW.

No.		Per. oz.	Per. lb.
302	Deep	\$2 00	\$16 00
303	Straw	1 75	14 00
304	Buttercup	1 75	15 00
305	Orange	1 75	14 00
306	Golden	1 75	14 00

BROWN.

291	Eagle	\$1 50	\$12 00
292	Dark	1 50	12 00
293	Brown No. 2	1 50	12 00
294	Pale	1 25	10 00
295	Maroc	1 50	12 00
296	Deep Chestnut	1 50	12 00
297	Yellow	1 50	12 00
298	Violet	1 50	12 00

TURQUOISE.

224	Turquoise	\$1 50	\$12 00
225	Turquoise	1 25	10 00
226	Turquoise	1 50	12 00
227	Turquoise	1 50	12 00
228	Turquoise	1 50	12 00
229	Turquoise	1 25	10 00

PURPLE.

271	Deep Concord	\$1 75	\$14 00
272	Dark Amethyst	1 75	14 00
276	Purple No. 2	1 75	14 00
280	Purple Violet	1 75	14 00
284	Royal	1 75	15 00
285	Royal No. 2	1 75	15 00
286	Deep	2 00	16 00
289	Amaranth	2 00	16 00

FONDANT.

371	Soft	\$0 75	\$7 00
372	Hard	1 00	8 00
373	Medium	75	7 00
374	Painting	1 00	8 00
375	For Silver	1 00	8 00
376	For Silver Blue...	1 00	8 00

RED.

333	Gold, Silver or Cop- per	\$3 00	\$24 00
334	Dark	5 00	40 00
336	For Gold	6 00	48 00
338	10kt and Silver...	3 00	24 00
341	10kt	4 00	32 00
349	Dark	6 00	48 00

ENAMEL CRUSHER.



An improved and efficient tool for pulverizing enamels and crystals of all sorts.

This Crusher will be found useful, not only to enamellers, but likewise to the lapidary for pulverizing diamonds, and will also prove a valuable adjunct to the laboratory.

Base, $2\frac{1}{2}$ inches diameter by 3 inches high; plunger, 1 inch x $4\frac{1}{2}$ inches; weight, 4 pounds.

Price each, \$7 50

ENAMELERS' TONGS.

Specially Made for Enamellers' Use.



Lengths,	16"	18"	20"	24"	30"	36"
Each,	\$0 60	\$0 75	\$0 85	\$1 00	\$1 25	\$1 50

GENUINE SOFT FRENCH ENAMEL

Flows Without Heat.

Directions: Use a fine brush for jewelry repairs where the enamel is chipped, also for key stones, Masonic emblems, watch cases and dials, jet goods, and opera glasses.

Black,	\$0 40 per Bottle.
Red,	50 per Bottle.
Blue,	50 per Bottle.
Green,	50 per Bottle.
Purple,	50 per Bottle.

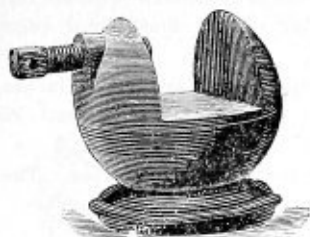


ENAMEL FILES—See Carborundum Lists.

Always mention page number, as well as item wanted. It avoids error.

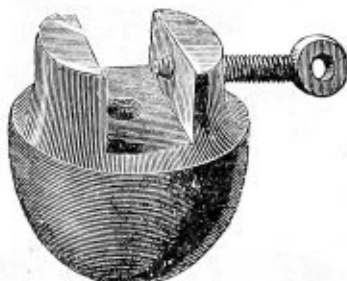
ENGRAVERS AND DIE-SINKERS' BALLS.

All screws are hardened steel.

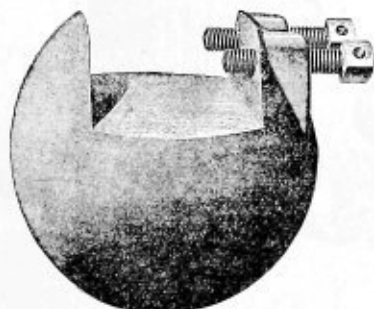
We can furnish these balls with bottoms turned smooth up to the opening—
AT EXTRA COST.

PRICE does not include PAD.

No.	Each.	Diam.	Opens.	Wt.
E	\$1.75	4"	1 3/4"	7 1/2 lbs.
F	2.00	4 3/4"	2"	9 "



No.	Each.	Diam.	Opens.	Wt.
G	\$1.25	3 3/4"	1 1/4"	6 1/2 lbs.
H	1.40	4"	1 3/4"	8 "
I	1.50	4 1/4"	1 7/8"	9 1/2 "
J	1.60	4 3/4"	1 7/8"	11 "
K	1.75	4 3/4"	1 7/8"	12 1/2 "
L	4.50	7"	2"	30 "



No.	Each.	Diam.	Opens.	Wt.
A	\$3.75	5 1/2"	2 1/2"	12 lbs.
B	4.75	5 1/2"	3"	15 "
C	6.00	6 1/4"	3 1/2"	25 "
D	7.50	7"	4"	35 "
X	8.00	10"	5"	45 "

Ball X has 4 screws and is more flat and lower down than the illustration.



ENGRAVERS' BOWLS.



No.	6" diam., 1/2" cast steel.	Each.	\$1.25
W.	PRICE does not include PAD.		

REVOLVING TABLE.

No.	Each.
N 4" diameter	\$3.00
P 6 3/4" " "	5.00

Machine finished iron.

No. R \$2.25. Has a wood top and bottom.

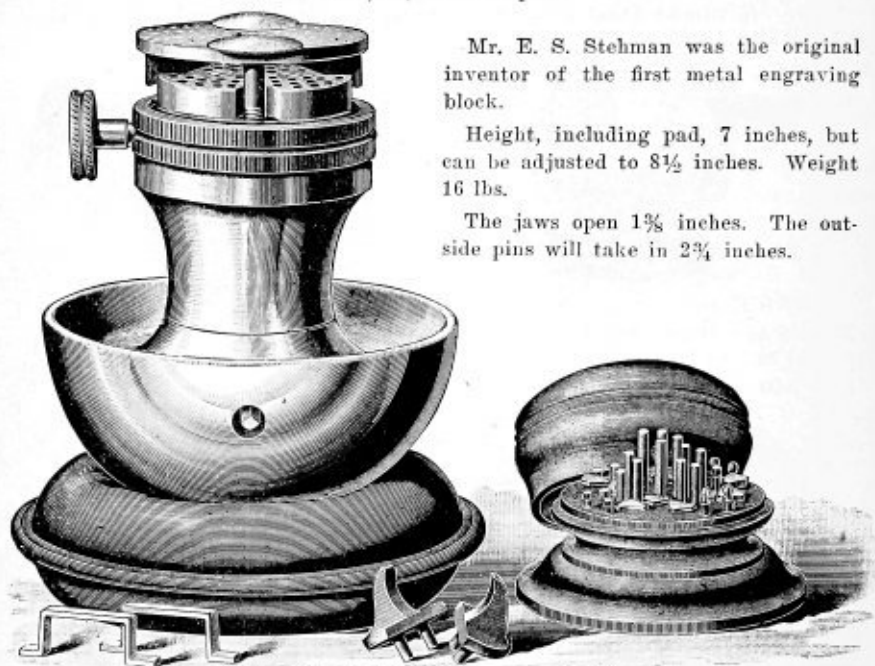
THE STEHMAN REVERSIBLE BALL BASE ENGRAVING BLOCK.

No. "A," \$16.50 Complete.

Mr. E. S. Stehman was the original inventor of the first metal engraving block.

Height, including pad, 7 inches, but can be adjusted to $8\frac{1}{2}$ inches. Weight 16 lbs.

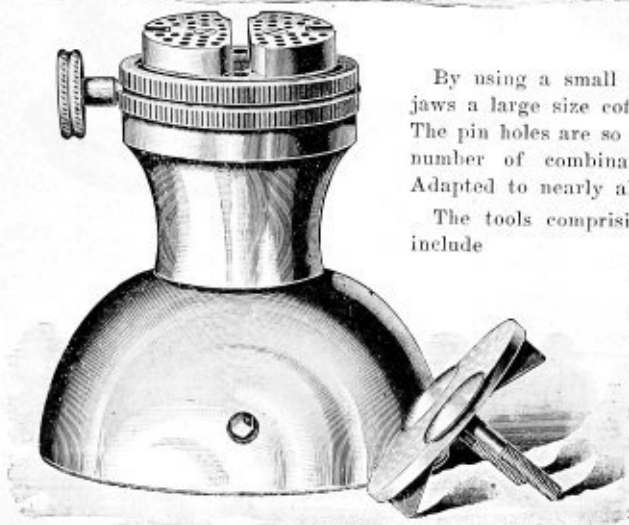
The jaws open $1\frac{3}{8}$ inches. The outside pins will take in $2\frac{3}{4}$ inches.



By using a small block of wood in the jaws a large size coffin plate can be held. The pin holes are so arranged that a large number of combinations may be made. Adapted to nearly all classes of work.

The tools comprising the set as shown include

- 1 full set of Pins and Pegs.
- 1 Spoon Holder.
- 1 Button Holder.
- 1 Ring Holder.



"SPECIAL" ENGRAVING BLOCK.

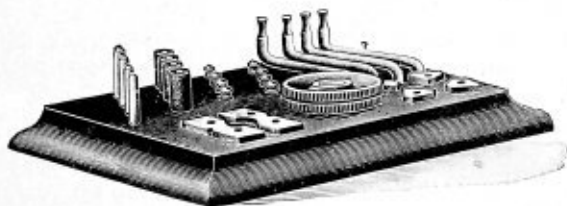
Duplex Base Anti-Friction.

(Designed by an engraver for engravers.)



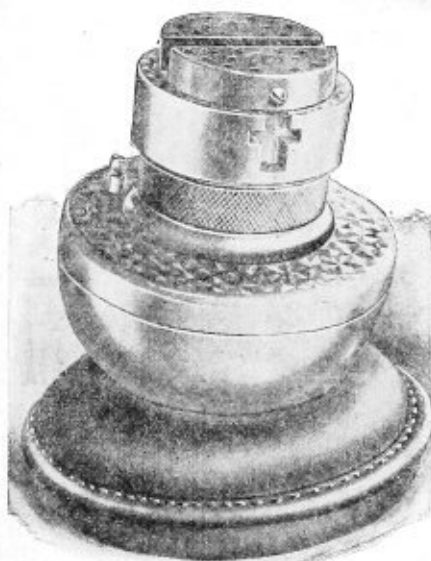
The head is $2\frac{1}{2}$ inches in diameter, a size conveniently grasped by the hand, and by means of the extension pins furnished it will hold articles up to $5\frac{1}{2}$ inches in diameter. The block stands 6 inches high, weighs 7 lbs., the diameter of the base being 4 inches. The attachments comprise 26 parts, to-wit:— 6 sets (4 in each set) and 2 Novelty holders, all mounted on a hard wood base, as illustrated.

The block can be readily converted into a flat base block by removing the spindle bearing screw and resting the inverted base on the hard wood ring furnished with each block.



Price complete, including attachments and leather pad, \$6 00.
Extras: Wood Base with Drawer, \$1 50; Glass Shade, \$1 25.

IDEAL (KEYLESS) ENGRAVING BLOCK.



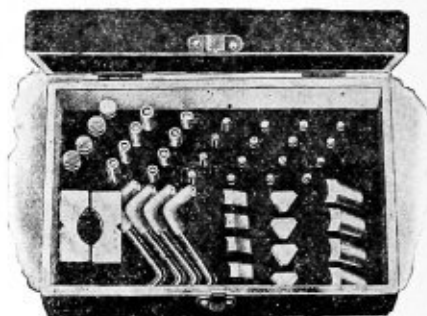
(Patent Pending)

Block, complete with attachments\$16 50
 Block, without attachments.... 14 00

Height over all, including pad, six inches; weight is about twelve pounds, diameter of base four and one-half inches, diameter of head two and three-quarter inches.

The turntable revolves on a self-contained train of tempered steel balls, which may be removed in an instant, when a less sensitive motion will be obtained, or the turntable may be locked to the base by the insertion of the locking-pin.

This block is made of the best materials throughout, finely finished and nickel plated.



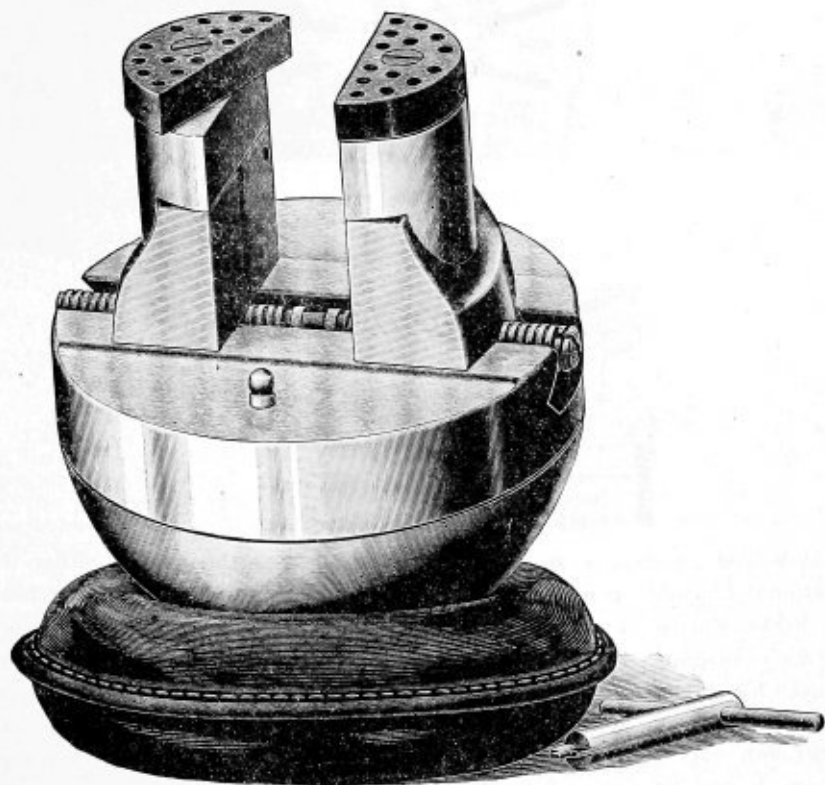
ATTACHMENTS.

Complete set of attachments as shown	\$3 00
Attachments No. 1, button and hat-pin holders, four to set....	35
Attachments No. 2, $1\frac{1}{8}$ " rubber covered pins, four to set.....	20
Attachments No. 3, $\frac{3}{8}$ " rubber covered pins, four to set.....	20
Attachments No. 4, $\frac{3}{4}$ " plain pins, not covered, four to set..	20
Attachments No. 5, $\frac{1}{2}$ " concave pins, four to set	25
Attachments No. 6, $\frac{1}{2}$ " taper pins, four to set	25
Attachments No. 7, $\frac{7}{16}$ " taper pins, four to set	25
Attachments No. 8, novelty holders, two to set	50
Attachments No. 9, triangular pins, four to set	35
Attachments No. 10, locket holders, four to set	50
Attachments No. 11, watch holders, four to set	75
Attachments No. 12, bent-pins, rubber covered, four to set....	30

THE "REX" ENGRAVING BLOCK.

\$20.00 Complete.

If the price seems high, remember it cannot be compared with any other Block.

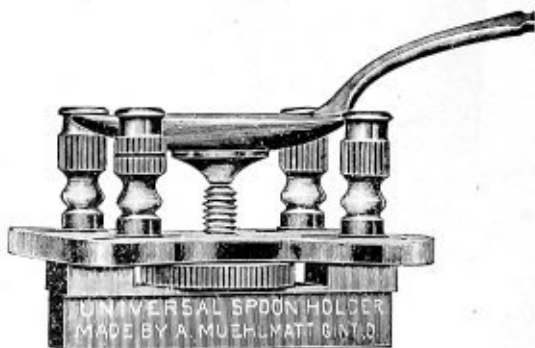


Turntable base, $5\frac{1}{2}$ " diameter. Ball bearings. Jaws open $4\frac{1}{2}$ ". All attachments mounted in neat wood case. The long Jaws may be removed. Strictly the best Block made.

MUEHLMATT'S UNIVERSAL SPOON HOLDER.

Fits All Engraving Blocks.

UNIVERSAL IN EVERY WAY.

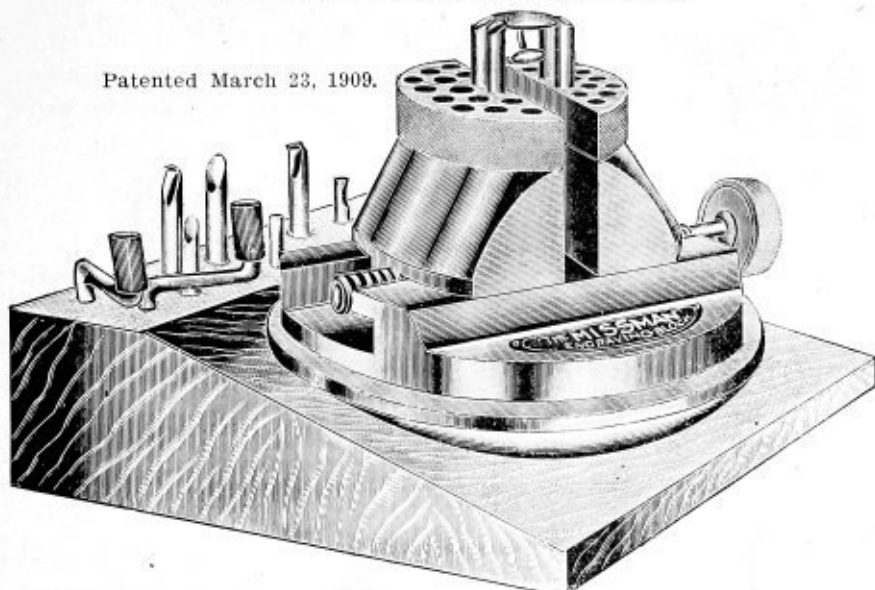


Will hold all sizes of spoons from the smallest to the largest, either the bowl or the handle. It will fit any Engraving Block and may be used for holding Forks, Knives, Medals, Coins, Lockets, etc., and requires neither key nor wrench to operate. The workmanship and material are of the best. The work support has $\frac{1}{2}$ -inch vertical adjustment and is provided with a ball joint adjusting itself readily to any shaped article placed upon it. The four posts are provided with steel flanges, the under side of which are faced with fibre washers, offering a splendid surface for adjusting the work without injury to same. The flange posts are quickly adjusted to position, and one post only needs to be moved to insert articles of the same size. When inserting articles to be engraved the post should be brought to the work before raising the work support. Lower the work support before releasing the post when removing work from holder.

Price \$3 00 each.

THE NEW MISSMAN ENGRAVING BLOCK.

Patented March 23, 1909.



Price, Complete, \$13 50
Every Block is Fully Guaranteed.

This block is only a little over four inches in height, and can be operated on top of the bench with the workman's arms resting in an easy and natural position.

The attachment pins are twice the size of those used in other blocks and are hollowed out to fit any size article from the largest to the smallest, and hold it securely.

The upper jaws are detachable, or may be locked fast by a set screw in each jaw, they open about three inches in depth with the attachment to take bracelets, cane handles, etc., and are knurled on the outside edge to make a firm hand grip.

The jaws revolve on a turntable base which is ballbearing and the balls are so located, near the outside edge, that it cannot wear and cause friction as some blocks do.

The turntable may be locked with a key for chasing, die cutting and ornamental work, the block being heavy enough for all kinds of work that comes under the head of engraving, but is not as heavy and clumsy as some of the higher priced blocks. The weight of block, complete being only about ten pounds.

The block is polished and nickel-plated, and rests in a leather lined hole sunk in a nicely finished inclined wood base with holes in the top to keep all of the attachments in place ready for use.

When operated in conjunction with the inclined base, the block may be tilted in any position necessary to engrave all round-faced articles. The thumb screw comes out when the block is in use.

Write your order thus—1 only Missman—207.

ENGRAVERS' GLASSES.



These glasses are in general use among engravers, carvers and die cutters; and are used likewise as re-touching glasses.

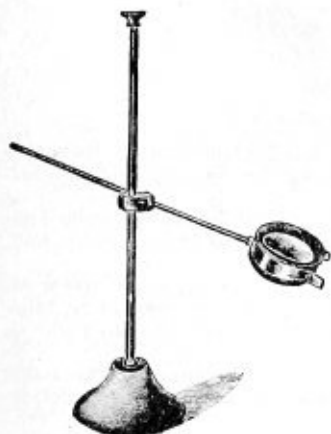
SINGLE LENS.

No.	Diameter	Focus	Each
145A	1 $\frac{3}{8}$ "	3"	\$0 60
146A	1 $\frac{5}{8}$ "	3 $\frac{1}{2}$ "	75
147A	1 $\frac{7}{8}$ "	4"	1 00
148A	2 $\frac{1}{8}$ "	4 $\frac{1}{2}$ "	1 25

DOUBLE LENS.

No.	Diameter	Focus	Each
145	1 $\frac{3}{8}$ "	2"	\$1 25
146	1 $\frac{5}{8}$ "	3 $\frac{1}{2}$ "	1 50
147	1 $\frac{7}{8}$ "	4"	2 00
148	2 $\frac{1}{8}$ "	4 $\frac{1}{2}$ "	2 50

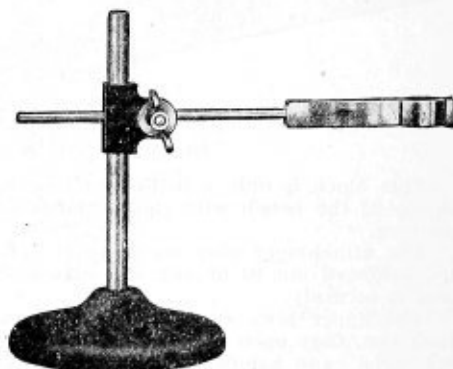
EYE GLASS STANDS.



This stand is well known to the trade, also the engraver.

No. "A" \$1 00 each.

Price does NOT include the glass.



No. TU \$3 00 each.

The Bases on above stands are large enough to give stability. They are japanned, all other parts being nickeled.

Both stands are supplied with a spring fork which takes any lens not more than 1 $\frac{1}{2}$ inches in diameter.

Do not forget our new system for ordering. Very simple and most invaluable, viz.: $\frac{1}{2}$ Doz. 147A-208.

ENGRAVERS' AND WATCHMAKERS' EYEGLASSES.

They are mounted in vulcanized rubber frames.

Note—The diameter always means the glass measurement taken inside of the frame.



No. 144.



No. 144 LP.

	Diameter	Each
B	$\frac{7}{8}$ "	\$0 25
C	1"	25
D	$1\frac{1}{8}$ "	25
E	$1\frac{1}{2}$ "	30

	Diameter	Each
G	$1\frac{3}{4}$ "	\$0 30
H	$\frac{7}{8}$ "	25
J	1"	25
K	$1\frac{1}{8}$ "	25

Above also furnished in 2", $2\frac{1}{2}$ ", 3", $3\frac{1}{2}$ " and 4" Focus.

Specify the **Focus** desired. All same price.

No. 144A is set with two lenses ($\frac{1}{2}$ " and $\frac{7}{8}$ " diameters) of different foci and gives strong magnification and a flat field. The front lens may be removed and a longer focus and greater working distance (2") thus obtained.

With both lenses in place working distance is 1".



No. 144A.

This glass has a lens $\frac{1}{2}$ " in diameter and gives a 1" focus. No. 144 $\frac{1}{2}$. Price, 35c each.

No. 144A. Price, 50c each.



No. 144 $\frac{1}{2}$.

ALUMINUM FRAME EYEGLASSES.

	Diameter	Each
"L"	$\frac{7}{8}$ "	\$0 25

	Diameter	Each
"M"	1"	\$0 25

	Diameter	Each
"N"	$1\frac{1}{8}$ "	\$0 25

Specify Focus desired—2", $2\frac{1}{2}$ ", 3", $3\frac{1}{2}$ " or 4".

These Frames will not break from a fall.

POCKET MAGNIFIERS.

Rubber Mounting.

Only the best quality of vulcanized rubber is used in these mountings which are light and durable and of neat design. The lenses are accurately ground and polished.

OVAL SHAPE.



No. 50.

This mounting is fitted with one double convex lens of a power sufficient for the examination of objects requiring a limited magnification only.

Number	Diam. In.	Each
50	$\frac{3}{4}$	\$0 20
56	1	30
62	$1\frac{1}{4}$	40
68	$1\frac{1}{2}$	50
74	$1\frac{3}{4}$	60
78	2	75



No. 51.

The two double convex lenses of this magnifier are different foci so that it is possible to obtain three different magnifications.

Number	Diam. In.	Each
51	$\frac{5}{8}$, $\frac{3}{4}$	\$0 35
57	$\frac{7}{8}$, 1	50
63	$1\frac{1}{8}$, $1\frac{1}{4}$	60
69	$1\frac{1}{4}$, $1\frac{1}{2}$	75
75	$1\frac{1}{2}$, $1\frac{3}{4}$	1 00
79	$1\frac{3}{4}$, 2	1 25

We supply also a double concave lens in No. 51 mounting, which serves as a reducing glass for artists, engravers, etc.

Specify same if wanted.



No. 68 cc.

Number	Diam. In.	Each
56 cc.	1	\$0 50
62 cc.	$1\frac{1}{4}$	70
68 cc.	$1\frac{1}{2}$	90

BELLOWS SHAPE.



No. 101.

Number	Diam. In.	Each
101	$\frac{3}{4}$	\$0 20
110	$\frac{7}{8}$	25
119	1	30
128*	$\frac{3}{4}$	30



No. 102.

These lenses are double convex and of different foci, thus giving three different magnifications.

Number	Diam. In.	Each
102	$\frac{5}{8}$, $\frac{3}{4}$	\$0 35
111	$\frac{3}{4}$, $\frac{7}{8}$	40
120	$\frac{7}{8}$, 1	50
129*	$\frac{5}{8}$, $\frac{3}{4}$	50



No. 103.

The three lenses in these magnifiers are of different foci and may be combined to give five magnifications.

Number	Diam. In.	Each
103	$\frac{1}{4}$, $\frac{5}{8}$, $\frac{3}{4}$	\$0 50
112	$\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$	60
121	$\frac{3}{4}$, $\frac{7}{8}$, 1	75
130*	$\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$	70

* With diaphragm which increases the definition of the lenses.

READING GLASSES.



The lenses are accurately ground from clear white glass and are highly polished.

Handles are made in ebonized wood.

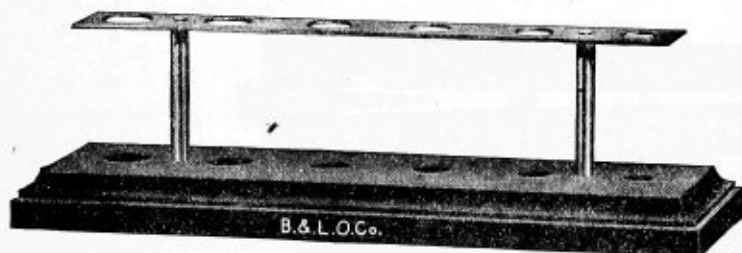
Number	Diam. Inches	Each	Number	Diam. Inches	Each
200	2	\$0 60	209	4½	\$2 25
202	2½	80	210	5	2 50
204	3	1 00	211	5½	3 00
206	3½	1 50	212	6	3 50
208	4	2 00			

REDUCING GLASSES.



Number	Diam. Inches	Each	Number	Diam. Inches	Each
200 cc.	2	\$1 00	206 cc.	3½	\$3 00
202 cc.	2½	1 50	208 cc.	4	4 00
204 cc.	3	2 00			

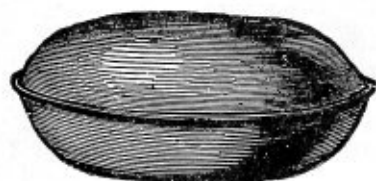
HOLDER FOR ABOVE GLASSES.



No. 240. \$1 25 each.

This holder carries six glasses from 2 to 6 inches in diameter. The base is wood, the post and racks are nicked metal.

ENGRAVERS' "LEATHER" PADS.



Solid.		
No.	Dozen	Diam.
1	\$3 00	3"
2	4 00	4"
3	5 00	4½"
4	6 00	5"
5	7 50	5½"
6	9 00	6"
7	10 00	6½"
8	12 00	7"
9	15 00	8"
10	18 00	9"
11	24 00	10"

Ring.		
No.	Dozen	Diam.
12	\$3 00	3"
13	4 00	4"
14	6 00	5"
15	7 50	5½"
16	9 00	6"
17	10 00	6½"
18	12 00	7"
19	15 00	8"
20	18 00	9"
21	24 00	10"

RING CLAMPS.



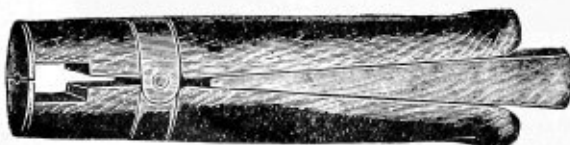
No. 26.
Each \$0 40



No. 27.
Each \$0 40



No. 28.
Each \$0 50

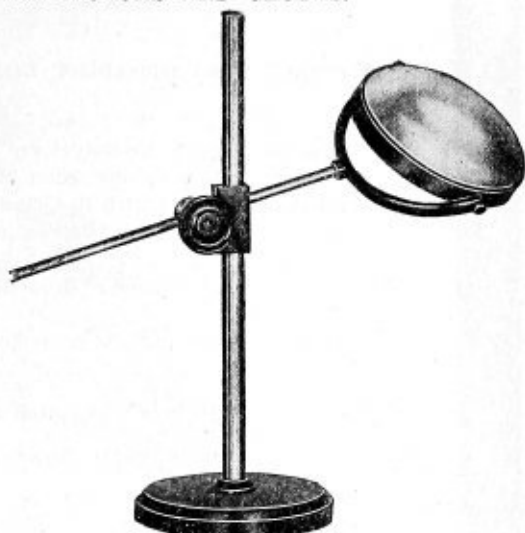


LAFAYETTE CLAMP.
Each \$0 75

ENGRAVERS' REFLECTORS AND GLOBES.



No. 1. \$1 25 each.



BULLS-EYE CONDENSER.

The lens is a strong plano convex condenser.



GLASS GLOBES.

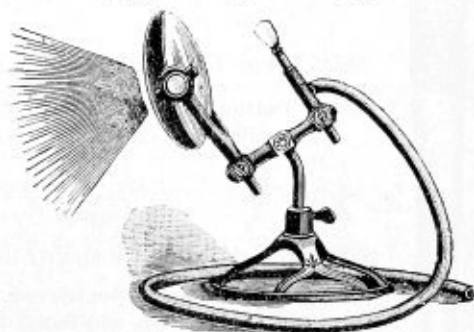
No.	Size	Each
3	$\frac{1}{2}$ gallon	\$1 00
4	1 gallon	1 25

EXTRA REFLECTOR GLOBES.

To fit into the No. 1, also No. 2 frames.

Price, 50c each.

No.	Diameter of Lens in MM.	Each
1746	38	\$3 00
1748	56	5 00
1750	75	7 00



No. 2. \$2 50 each.

Note—The upright stem is now made straight, and not bent as shown in illustration.

Our new system of writing orders is very simple, plain and decisive, viz.:
1 only No. 3-213.

DOTTING, ALSO STRAIGHT LINE ROULETTES.

The Improved Style Roulettes are superior both in design and construction to any other Roulette yet devised. The Roulette is parallel with the handle, so that the exact spot which it is desired to lighten can readily be seen.

Particulars of Roulettes.

No. 1, Straight Line, cut extra deep to match any Screen	\$1 75
No. 2, Cross Line Halftone, to match any Screen....	1 75
No. 3, Dotting, One to Eight Rows, to match any Screen	1 75

The American Style Roulettes differ from the Improved Roulettes only in that the Roulette is at right angle with the handle instead of parallel with the handle.

No. 4, Straight Lined, cut extra deep, to match any Screen	\$1 50
No. 5, Cross Line Halftone, to match any Screen....	1 50
No. 6, Dotting, One to Eight Rows, to match any Screen	1 50

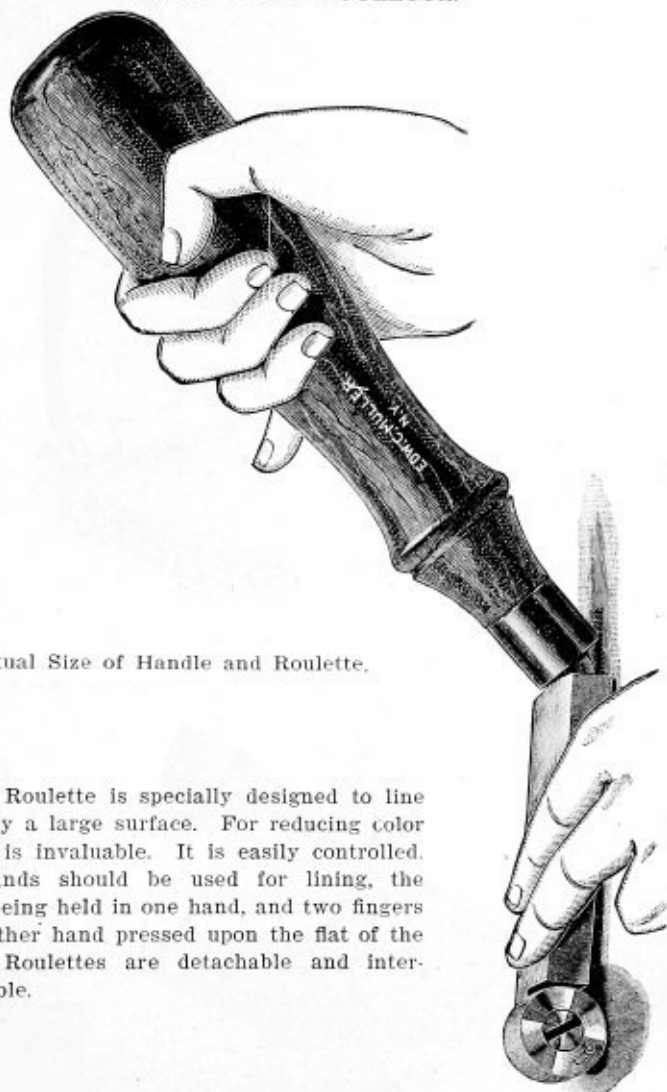
Note—Do not fail to specify exactly what you want.

Send 10 cents for Registered Postage for one Roulette and 3 cents for each additional Roulette.

American
Style.

Improved
Style.

COLOR WORK ROULETTE.



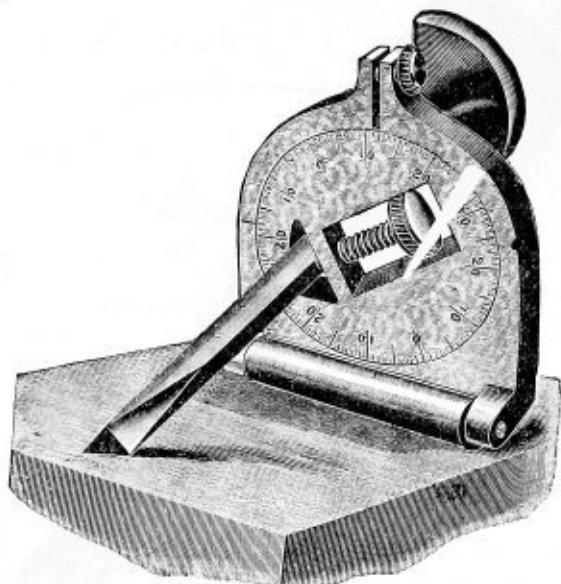
Actual Size of Handle and Roulette.

This Roulette is specially designed to line uniformly a large surface. For reducing color work it is invaluable. It is easily controlled. Both hands should be used for lining, the handle being held in one hand, and two fingers of the other hand pressed upon the flat of the Shank. Roulettes are detachable and interchangeable.

	Each.
Roulette No. 7, Straight Line, to match any Screen, without handle.....	\$1 75
Roulette No. 8, Cross Line, to match any Screen, without handle.....	1 75
Handle with Shank, extra strong, to take either Roulette No. 7 or No. 8...	1 60

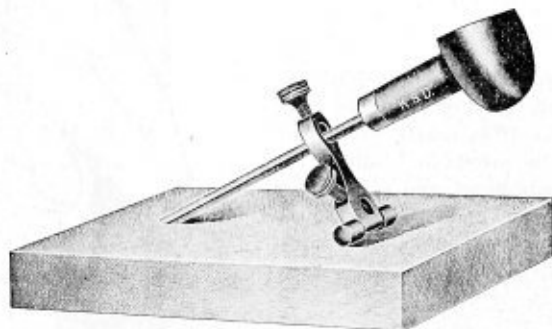
Send 15 cents for registered postage for one Roulette No. 7 or No. 8, with handle, and 5 cents for each additional Roulette with handle.

GRAVER SHARPENING CLAMPS.



No. "A" \$1 50

This Clamp has been on the market for many years and is a well liked tool.



No. 78 Price, 50c



Will hold graver readily to any desired angle. Neat, light and inexpensive.

Always affix page number to item number, thus: 1 only "A"-216. It avoids error.

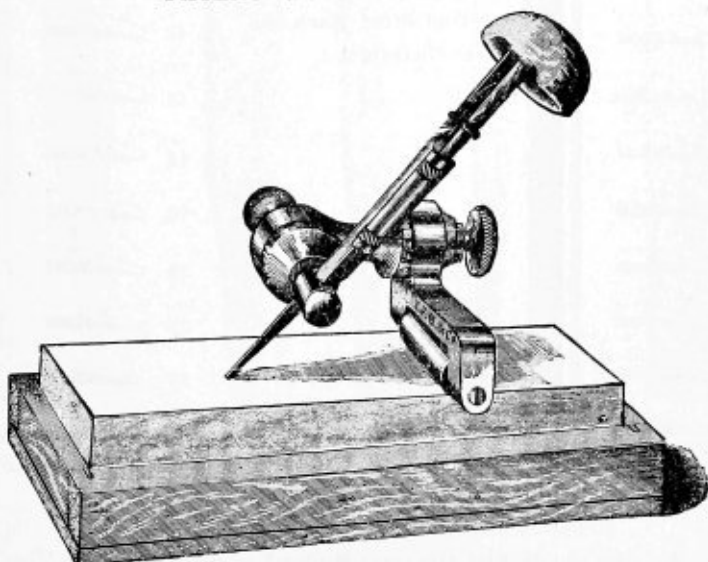
THE UNIVERSAL GRAVER AND TOOL SHARPENER.



No. 713 \$2 00

The grooves in roller run on the corner of oil stone, giving a steady and perfect track. Rollers may also be run on top of stone. Produces a bright, smooth cut and a perfect edge. Nickel plated.

PATENT GRAVER SHARPENER.



No. 1531. Nickel plated, each\$1 75
 No. 1532. Width 5 in. stone in box, each..... 2 60

Order this way: 1 only 1531-217, for this is the quickest, safest and best way.

WATCH CASE AND JEWELRY ENGRAVING TOOLS.

Mullers'—Vautier's—Renards.

Specify Make Wanted.

ROUND NOSE
GRAVERS.FLAT NOSE
GRAVERS.

Nos.



63



62



61



60



59



58



57



56



55



54



53



52



51



50



These Tools are
made of the Best
Quality of Sheffield
Tool Steel. Each one
is Guaranteed.

Nos.



49



48



47



46



45



44



43



42



41



40



39



38



37



36



Vautier's and Muller's, all shapes and sizes, 10c each.

Renard's make, all shapes and sizes, 12c each.

Note—We can supply Flat Gravers, Mullers' make, Nos. 39, 40, 41 and 42, lapped ready for use, 15c each.

Note—If customer fails to specify the kind wanted, we use our best judgment in customer's best interest, and hope to please.

WATCH CASE AND JEWELRY ENGRAVING TOOLS.

Made of the Very Finest Quality Sheffield Steel. Every Tool is Guaranteed.



KNIFE SHAPE.
10c Each



No. 1.
15c



No. 2.
20c



No. 3.
25c



ENGINE TURNING
TOOL.
45c Each

Mullers', Vautier's or Renard's Tools.

Specify which make you want. When customer fails to specify, we use our better judgment.

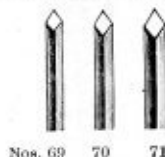
Mullers' make of Chisels Nos. 1, 2 and 3 are lapped on both sides and are perfectly true.

WATCH CASE AND JEWELRY ENGRAVING TOOLS.

Hardened and Tempered to Hold the Cutting Edge.

TAPER SQUARE GRAVERS.

Mullers' "or" Vautier's
All sizes, 15c each.

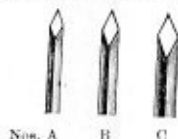


Renard's Make
All sizes, 18c each.



TAPER LOZENGE GRAVERS.

Mullers' "or" Vautier's
All sizes, 15c each.

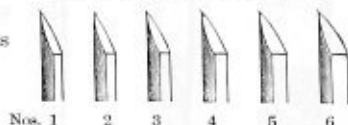


Renard's make.
All sizes, 18c each.



ELLIPTIC GRAVERS.

Mullers' "or" Vautier's
All sizes, 10c each.

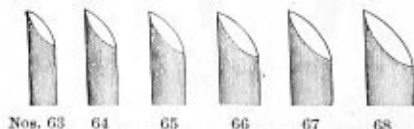


Renard's make.
All sizes, 12c each.



OVAL GRAVERS.

Mullers' "or"
Vautier's
All sizes,
10c each.

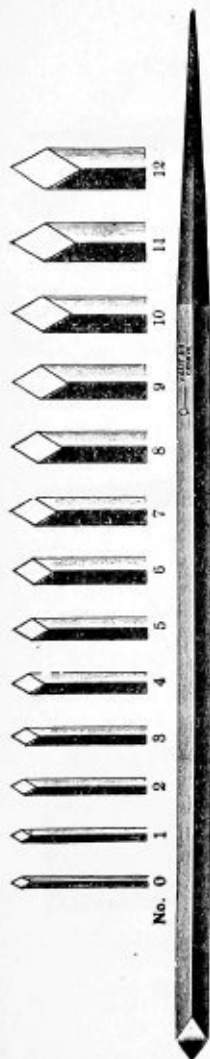


Renard's make.
All sizes,
12c each.



Note—When customers fail to specify the make wanted, we use our best judgment in filling orders.

SQUARE AND LOZENGE GRAVERS.

SQUARE
GRAVERS

When ordering be
sure to specify make
and number wanted;
otherwise we use our
best judgment in fill-
ing orders.

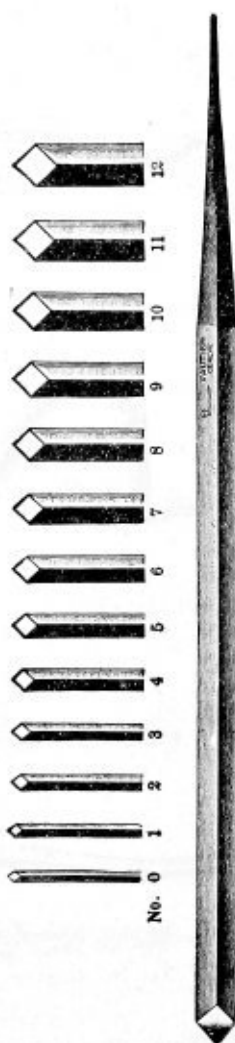
RENARD'S

Make,

All numbers,

1 to 8 only,

15c Each.

LOZENGE
GRAVERSMuller's
Vautier's

Same Prices

{	No. 1 to 4, each	\$0 10
	No. 5 to 8, each	15
	No. 9 to 12, each	20

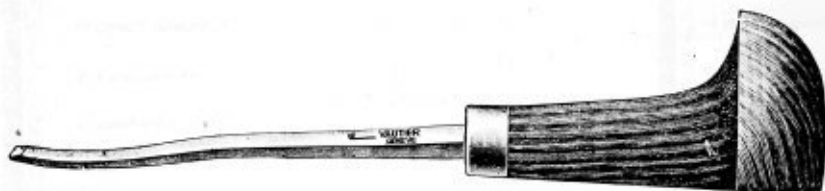
ENGRAVERS' TOOLS.



No. A. \$2.00 dozen. 20 cents each.



No. B. \$2.00 dozen. 20 cents each.

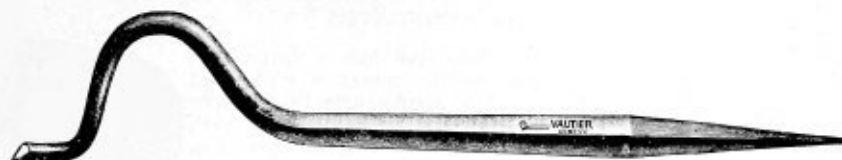


No. C. Graver only (not handled). 20 cents each. \$2.00 dozen

No. D. Gravers handled and sharpened ready for use, \$6.00 dozen

Note.—If you do not find within the pages of this book the kind of a graver, or any other tool or item, that you are interested in, please give us the facts and get our prices before placing the order elsewhere. This is our first catalog and we have tried to make it complete.

GRAVERS.



No. 1 Vautier's \$3 50 dozen 35c each



No. 3 Vautier's \$2 00 dozen 20c each

*No. "A" Muller's 2 50 dozen 25c each



No. 4 Vautier's \$2 00 dozen 20c each

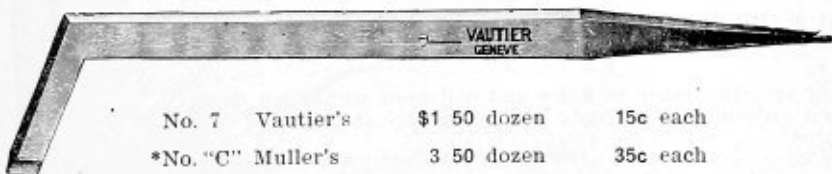


No. 5 Vautier's \$3 00 dozen 30c each



No. 6 Vautier's (not polished) \$1 50 dozen 15c each

*No. "B" Muller's 2 50 dozen 25c each



No. 7 Vautier's \$1 50 dozen 15c each

*No. "C" Muller's 3 50 dozen 35c each

*Note—All of Muller's Tools are sharpened—ready for use

TOOLS FOR WOOD, PHOTO, AND COPPERPLATE ENGRAVERS.

PATENT GRADUATING SHADING GRAVERS, CONVEX
AND CONCAVE.

This unique and entirely original tool has a value that cannot be overestimated, it successfully meets a want that every engraver has experienced. One stroke with this Graver in the hands of a novice will graduate straight tints much quicker and with greater accuracy than the most expert can produce. Kept in stock: 6 lines, 85 to the inch: or 8 lines, 110 to the inch. Any other sizes made to order and delivered within ten days.

Convex Graver

Work of
Convex Graver

Concave Graver

Work of
Concave Gravers.

The Shading on this illustration done in 5 minutes with the
Convex Shading Tool.

CONVEX OR CONCAVE.

85 or 110 lines to the inch, 6 and 8 lines, with handle,
each, \$1 25

Other varieties made to order and delivered within ten days.
When ordering these Tools specify exactly the kind of tool
wanted.

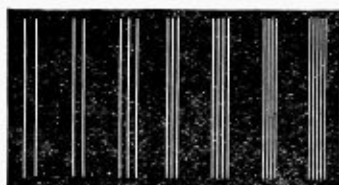
The list price for this class of tool does not include free delivery. The nature of the tool requires extra care in sending a single tool by mail, therefore send 5 cents for Insurance and Postage for one Tool, and 3 cents for each additional Tool.

All uninsured mail sent at purchaser's risk.



MULTIPLE GOUGES.

These have the same general qualities as the Lining Tools previously described, and are cut **extra deep**. They are used for backgrounds and sky work. Each line on the Gouge cuts as easily as a single graver. They are made with 2, 3, 4 or 5 lines as required, the lines being 16, 25, 35, and 45 to the inch as per Diagram 2. There is, of course, a limit to the width at which these tools can be used to advantage, and this width is shown in Diagram 2.



16 25 25 35 35 45 45

Diagram 2.—Shows spacing of lines and maximum width of Gouges.

PARTICULARS.

Multiple Gouges, made with 2, 3, 4, or 5 lines, 16 25, 35, or 45 lines to the inch, with handle, each.....\$1 00



Note.—The character of these tools require special care in packing for mailing, therefore, the list price does not include free delivery of same—send 5 cents for insurance and postage for one Multiple Gouge, and 3 cents for each additional Gouge.

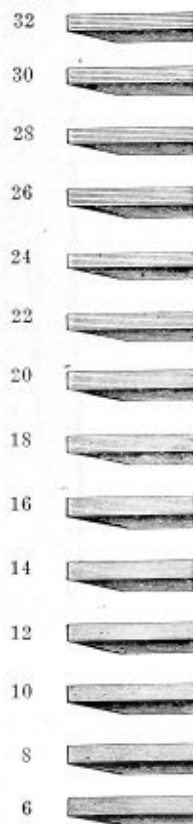
All uninsured mail sent at purchaser's risk.

WATCH CASE AND JEWELRY ENGRAVING TOOLS.

Made of the Very Finest Quality Sheffield Steel. Every Tool is Guaranteed.

LINING GRAVERS.

Nos.



The uniformity and durability of these Lining Tools cannot be excelled. Special attention is invited to the Patent Convex Liner (Lined Gouge), the advantages of which are obvious. When ordering, please state the grades and the number of lines desired. Gravers wider than $\frac{1}{8}$ inch subject to special prices.

Price, Regular Flat Lining Tool,	
each	\$0 35
Price, Patent Convex Lining Tool,	
each	50

Specify exactly what you want and avoid error. Note—Flat Gravers are always sent unless the Convex are specified.

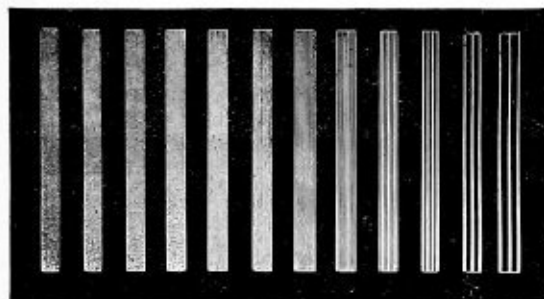
We carry the largest and best assortment of Engravers' Tools to be found in America.

Quick service—best prices. Get our prices before placing your orders elsewhere.

LINING TOOLS MADE ESPECIALLY FOR WOOD AND HALFTONE PLATES.

Made of the best STUBS steel, cut by hand, extra deep, hardened and tempered scientifically.

They are graded to exactly match any Screen, and the work they do is illustrated in Diagram 2 by the lines from 25 to 200 lines to the inch. The marked superiority of these Tools to any other similar Tools makes them more satisfactory and economical to use. They cut well, and wear well.



200 175 150 133 120 110 100 85 65 45 35 25

Diagram 1.

PARTICULARS OF LINING TOOLS.

Lining Tools made in $\frac{1}{16}$ in., $\frac{3}{32}$ in. and $\frac{1}{8}$ in. widths, to match any Screen, as below, with handles, each \$1 00

Kept in stock in above widths to match Screens 25, 35, 45, 65, 85, 100, 110, 120, 133, 150, 175, and 200 lines to the inch. Tools wider than $\frac{1}{8}$ in., subject to special prices.

The list price of these tools does not include a free delivery of same. They require extra care in packing for mailing. Send 5 cents for insurance and postage for one Lining Tool, and 3 cents for each additional Tool.

All uninsured mail sent at purchaser's risk.



ANGLE TINT TOOLS.

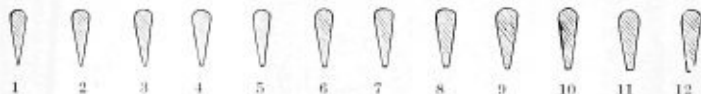
Every Tool is carefully tested and examined before delivery, and guaranteed to be the acme of perfection.

Angle Tint Tools are made, as desired, with Sharp, Round, and Flat Edges as per Diagram below. The Edges are ground in; the best STUBS steel is used.

Angle Tint Tools: length over all, $5\frac{1}{2}$ in.



Diagram Showing Edges of Sharp, Round and Flat Angle Tools.



Standard Sizes; order by number; for Edges see Diagram 3.

PARTICULARS OF ANGLE TINT TOOLS.

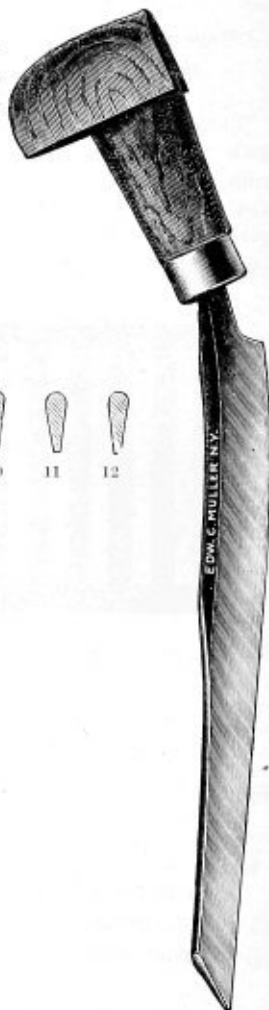
Order by **name** and **number**. Angle Tint Tools Nos. 1 to 12 are the same size, but their Edges vary as per Diagram 3 above. No. 1 is sharp only, the Edges of Nos. 2 to 12 vary in thickness, and are made Round or Flat.

Note.—It is, therefore, necessary to designate the kind of Edge wanted.

All Sizes and Shapes. Each \$0 85

Price includes a handle with each tool. Free delivery is not included in list price. Therefore, send 5 cents for Insurance and Postage for one Tint Tool, and 3 cents for each additional Tool.

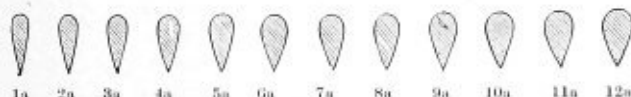
All uninsured mail sent at purchaser's risk.



ELLIPTIC TINT TOOLS.

Elliptic Tint Tools; length over all, $5\frac{1}{2}$ ins.

Elliptic Tint Tools are made with Sharp Edges, varying in sizes as per illustrations. Nos. 1 to 12. The Edges are ground in; the best STUBS steel is used.



Standard Sizes, Edges Sharp; order by number.

ALL ELLIPTIC TOOLS HAVE SHARP EDGES.

All Sizes, with handle. Each \$0 85

List price does not include free delivery, therefore send 10 cents for Insurance and Postage for one Tint Tool and 3 cents for each additional tool.



All uninsured mail sent at purchaser's risk.

EVAPORATING DISHES.



PORCELAIN WITH LIGHT RIM.

Sizes Given Are Approximate.

No.		Each.
1.	5¼ inch. 7 ounce	\$0 55
2.	6½ inch. 1 pint	78
3.	7¾ inch. 1½ pint	1 00
4.	9¼ inch. 2½ pint	1 20
5.	10½ inch. 3½ pint	1 56
6.	11¼ inch. 5 pint	2 10
7.	11¾ inch. 5½ pint	2 70
8.	12¼ inch. 7 pint	3 30
9.	13½ inch. 1½ gallon	3 90
10.	14¾ inch. 1½ gallon	4 80
11.	16¼ inch. 1¾ gallon	5 40
12.	17¾ inch. 2½ gallon	7 80

Glazed Inside, with Heavy Rim
Around the Top.

Sizes Given are Approximate.

No.		Each.
00.	17½ inch. 3 gallon	\$7 00
0.	14¼ inch. 2 gallon	5 00
10.	12 inch. 1 gallon	3 00
20.	11 inch. ¾ quart	2 50
30.	10½ inch. ½ gallon	1 85
40.	9½ inch. 3 pint	1 40
50.	8 inch. 1 quart	1 25
60.	7¾ inch. 24 ounce	1 10
70.	6¾ inch. 20 ounce	90
80.	5¾ inch. 16 ounce	80
90.	5 inch. 8 ounce	65

PORCELAIN CASEROLES.



All Porcelain Without Cover.

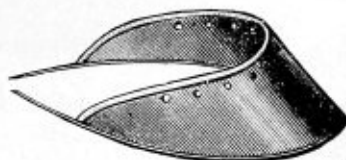


Porcelain Bowl and Cover

Pints.	Diameter.	With Porcelain Handle—No		With Cover and Wood Handle.	
		No.	Cover.	No.	
¼	3½ inches.	A	\$7 20 doz.	G	\$10 20 doz.
½	4 inches.	B	8 75 doz.	H	11 75 doz.
¾	4¼ inches.	C	10 50 doz.	J	12 80 doz.
1	4½ inches.	D	12 80 doz.	K	16 75 doz.
1½	6¼ inches.	E	20 50 doz.	L	26 00 doz.
2	6¾ inches.	F	29 00 doz.	M	33 50 doz.

Note.—By affixing page number to each item ordered saves you looking through to index to locate the page where the item is listed when you come to check your bill—a most valuable feature.

ADJUSTABLE EYE SHADES.



These shades are metal bound.

No. A Linen,	Gross \$7 92	Dozen \$1 00	Each \$0 15
No. B Leatherette,	Gross 5 00	Dozen 75	Each 10
No. 1 Celluloid,	Gross 10 00	Dozen 1 25	Each 20



No. 2 WITH ELASTIC HEAD
BAND

This is a neat, light-weight shield
and very well liked.

Gross	Dozen	Each
\$6 00	\$0 75	\$0 15



No. 3 CELLULOID SHADE
With Adjustable Strap and Extra
Wide Visor

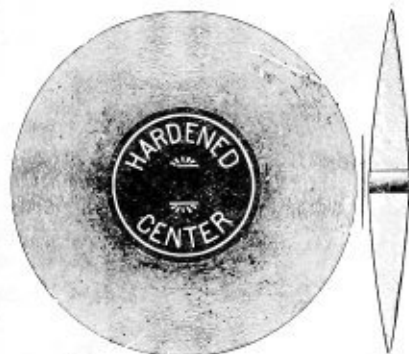
Gross	Dozen	Each
\$12 00	\$1 50	\$0 20

WHEN ORDERING

Be sure to affix page number to the item number—it will assist you
in checking your bills quickly.

NOTE—We carry the largest and best assortment of Engravers' Tools and
Supplies in America. If you fail to find within the pages of this book what you
want, write us and we will gladly send information and prices.

FINE WHITE SPANISH FELT WHEELS AND CONES.



POINTED OR FEATHER EDGE.

Diam.	No.	Extra Hard.		No.	Doz.
		¼"	⅜"		
1½"	A	\$0 90		G	\$1 00
1¾	B	1 15		H	1 25
2	C	1 35		J	1 50
2¼	D	1 60		K	1 75
2½	E	2 00		L	2 25

FINE WHITE FELT CONES.



Round or Pointed.				
Pointed	Length.	Diam.	Dozen.	Round
Numbers.				Numbers.
M	1 "	½"	\$0 75	T
N	1½	¾	1 15	U
P	1¾	7⁄8	1 70	V
R	1¾	1	2 20	W
S	2	1	2 50	X
Z	2	1¼	3 00	Y



Note.—Order all of above by respective numbers—viz., 1 doz., No. C—232
 "or" ½ doz. P—232.

WALRUS WHEELS.

Order these with care. Give every detail.
 Made of the "Best" Selected English Tanned Leather.

WIDTH OF FACES.

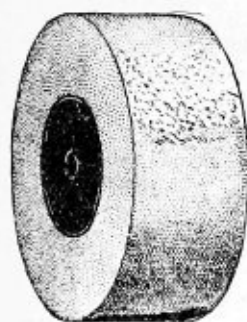
Diam. of Wheels.	¾"	1½"	5⁄8"	¾"	7⁄8"	1"	1¼"	1½"
1½"	\$1 20	\$1 45	\$1 65	\$1 80	\$2 16	\$2 40	\$3 00	\$3 60
2	1 80	2 40	2 75	3 00	3 60	4 20	5 40	6 00
2½	3 00	3 60	4 20	4 80	5 40	6 00	7 20	9 60
3	4 80	6 00	6 60	7 20	7 80	8 10	13 80	16 80
4	5 40	7 20	9 00	12 00	13 20	15 00	19 20	24 00

Prices are per dozen wheels.

All wheels larger than 4" in diameter are sold by weight only. Price upon application.

FINE WHITE SPANISH FELT WHEELS.

With Hardened Centers.



Width of Faces.

Diam.	$\frac{1}{4}$ "	$\frac{3}{8}$ "	$\frac{1}{2}$ "	$\frac{5}{8}$ "	$\frac{3}{4}$ "
1 $\frac{1}{8}$ "	\$ 70	\$ 75	\$1 00	\$1 25	\$1 50
1 $\frac{1}{4}$ "	85	90	1 15	1 40	1 65
1 $\frac{1}{2}$ "	90	1 00	1 25	1 50	1 75
1 $\frac{5}{8}$ "	1 00	1 15	1 40	1 65	2 00
1 $\frac{3}{4}$ "	1 15	1 25	1 50	1 75	2 25
2	1 35	1 50	2 00	2 50	3 00
2 $\frac{1}{4}$ "	1 60	1 75	2 50	3 00	3 50
2 $\frac{1}{2}$ "	2 00	2 25	3 00	3 50	4 00
3	2 40	3 25	4 00	4 75	5 50
4	4 25	5 75	7 00	8 50	10 00
5	6 00	8 00	10 00	12 00	14 00

ALL PRICES

ARE

PER DOZEN WHEELS

Width of Faces.

Diam.	$\frac{3}{8}$ "	1"	1 $\frac{1}{4}$ "	1 $\frac{1}{2}$ "
1 $\frac{1}{2}$ "	\$ 1 75	\$ 2 00	\$ 2 75	\$ 3 00
1 $\frac{3}{4}$ "	2 70	3 00	4 00	4 70
2	3 50	4 00	5 25	6 70
2 $\frac{1}{2}$ "	4 25	5 00	7 00	8 00
3	6 25	7 00	9 50	11 00
4	11 50	13 50	16 50	20 00
5	16 00	18 50	24 00	28 00
6	24 00	27 00	36 00	42 00
7	36 00	40 00	45 00	54 00



ROUND EDGE WHEELS.

Width of Faces.

Diam.	$\frac{1}{4}$ "	$\frac{3}{8}$ "	$\frac{1}{2}$ "	$\frac{5}{8}$ "
1 $\frac{1}{2}$ "	\$ 90	\$1 00	\$1 25	\$1 50
1 $\frac{3}{4}$ "	1 15	1 25	1 50	1 75
2	1 35	1 50	2 00	2 50
2 $\frac{1}{4}$ "	1 60	1 75	2 50	3 00
2 $\frac{1}{2}$ "	2 00	2 25	3 00	3 50

Note.—When ordering from this page be sure to specify in detail what you want; also give page number. This will avoid error. Essentials are—viz., Quantity, Diameter, Width, Shape, Hole, Page Number.

FELT IN SHEETS.

Full Size Sheets are 36 Inches Square.



Weights given in lists below are for sheets 18" square. Sheets smaller than 18" square at an advanced cost.

No. 1. \$2.00 per lb. Extra Hard, White Spanish Felt.

Thicknesses	1/8"	5/32"	3/16"	1/4"	3/8"	1/2"	5/8"	3/4"
-------------	-------	------	-------	-------	------	------	------	------	------

No. 2. \$1.75 per lb. Hard, White, Second Quality.

Thicknesses	1/4"	3/8"	1/2"	5/8"	3/4"	7/8"	1"	1 1/2"	2"
-------------	------	------	------	------	------	------	------	----	--------	----

No. 3. \$1.25 per lb. Medium Hard, White, Second Quality.

Thicknesses	...	3/16"	1/4"	3/8"	1/2"	5/8"	3/4"	1"	1 1/2"	2"
-------------	-----	-------	------	------	------	------	------	----	--------	----

No. 4. \$1.40 per lb. Hard, White, Regular Quality.

Thicknesses	.....	1/8"	5/32"	3/16"	1/4"	5/16"	3/8"	1/2"
Thicknesses	.....	5/8"	3/4"	1"	1 1/4"	1 1/2"	1 3/4"	2"

No. 5. \$1.90 per lb. Soft, White, First Quality.

60" wide. Thicknesses	7/32"	1/4"	9/32"	5/32"	} Less than full width of sheet at advanced prices only.
Weight of 18"x60"....	6 lbs.	7 lbs.	7 3/4 lbs.	9 lbs.	
Sheet 54" wide. Thicknesses.....			3/8"	1/2"	
Weight of 18"x54".....			8 lbs.	11 1/2 lbs.	

Price per pound upon application only.

No. 6. \$1.75 per lb. Soft, White, Buffer.

Thicknesses	1/2"	weighs 5 lbs. 18" sq.	3/4"	weighs 7 lbs. 18" sq.
-------------	-------	------	-----------------------	------	-----------------------

No. 7. \$1.35 per lb. Hard, French Gray, First Quality.

Thicknesses	1/4"	3/8"	1/2"	5/8"	3/4"	1"	1 1/2"	2"
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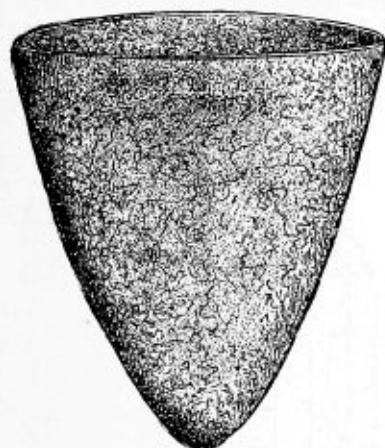
No. 8. \$1.10 per lb. Medium Hard, French Gray.

Thicknesses					1/2"	3/4"	1"
-------------	-------	--	--	--	--	------	------	----

Weight of all Sheet Felts 18" square, are approximately:

Thicknesses	.....	1/8"	5/32"	3/16"	1/4"	5/16"	3/8"	1/2"	5/8"
Weight, Lbs.	...	1	1 1/4	1 1/2	1 3/4	2 1/4	2 3/4	3 3/4	4 1/4
Thicknesses	.....	3/4"	3/8"	1"	1 1/4"	1 1/2"	1 3/4"	2"	
Weight, Lbs.	...	5 1/2	6 1/2	7 1/4	8 1/2	9 1/2	11	12 1/2	

FILTERS—FELT AND PAPER.



All Wool Felt Filters.

No.	Opening	Depth.	Capacity.	Doz.
1	8	x 8½ in.	¼ Gallon.	\$4.25
2	9½	x 10	½ "	6.00
3	11¼	x 12¼	¾ "	8.00
4	12	x 13½	1 "	10.50
5	13	x 14½	1¼ "	13.25
6	14	x 16	1½ "	16.00
7	16	x 17½	2 "	20.00
8	18	x 20	3 "	25.25
9	20½	x 22½	4 "	33.50
10	22½	x 24½	5½ "	41.50

FILTER PAPER.

White and Gray.

Unsurpassed in strength, uniformity of texture, and clear, rapid filtering.

Especially adapted for pharmaceutical and qualitative work, as well as for general manufacturing purposes.

Round. 100 Sheets in Pack.

WHITE.

No.	Diameter.	Per pack.	No.	Diameter.	Per pack.
11	3 inches. (7½ cm.)	\$0 10	18	8 inches. (20 cm.)	\$0 33
12	3½ inches. (9 cm.)	11	19	10 inches. (25 cm.)	46
13	4 inches. (10 cm.)	12	20	13 inches. (33 cm.)	70
14	4½ inches. (11 cm.)	14	21	15 inches. (38 cm.)	86
15	5 inches. (12½ cm.)	15	22	18 inches. (45 cm.)	1 20
16	6 inches. (15 cm.)	20	23	20 inches. (50 cm.)	1 50
17	7 inches. (18 cm.)	26	24	24 inches. (60 cm.)	2 00

GRAY.

No.	Diameter.	Per pack.	No.	Diameter.	Per pack.
25	4 inches. (10 cm.)	\$0 11	31	13 inches. (33 cm.)	\$0 60
26	5 inches. (12½ cm.)	14	32	15 inches. (38 cm.)	76
27	6 inches. (15 cm.)	18	33	18 inches. (45 cm.)	1 10
28	7 inches. (18 cm.)	24	34	20 inches. (50 cm.)	1 40
29	8 inches. (20 cm.)	28	35	24 inches. (60 cm.)	1 80
30	10 inches. (25 cm.)	40			

Order by respective numbers, viz.:

1 dozen No. 5—235.

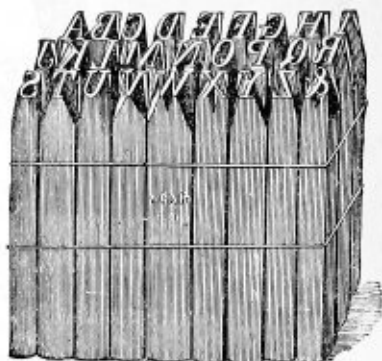
or 1 pack No. 28—235.

HAND-MADE STEEL FIGURES AND LETTERS.

These Steel alphabets and figures are made of a special grade of crucible steel, each piece hand forged, hand cut, separately hardened and tempered.

We guarantee every letter and figure and will replace any that do not give the proper amount of wear

SIZE.	GOTHIC.	ROMAN.	Steel		
			Letters Per Set	Figures Per Set	Stamps Per Letter
1-32	ABCDEFGHI	ABCDEFGHI	6.50	2.15	15c
1-24	ABCDEFGHI	ABCDEFGHI	6.00	2.00	12c
1-20	ABCDEFG	ABCDEFG	4.50	1.50	12c
1-16	ABCDEF	ABCDEF	4.05	1.35	12c
1-12	ABCDE	ABCDE	4.05	1.35	12c
3-32	ABCDE	ABCDE	4.05	1.35	12c
1-10	ABCD	ABCD	4.05	1.35	12c
1-8	ABCD	ABCD	4.05	1.35	12c
5-32	ABCIABC	ABCIABC	4.50	1.50	15c
3-16	ABCIABC	ABCIABC	5.25	1.75	17c
7-32	ABIAB	ABIAB	6.00	2.00	18c
1-4	ABIAB	ABIAB	6.75	2.25	22c
5-16	ABIAB	ABIAB	9.00	3.00	30c
3-8	AIA	AIA	10.80	3.60	40c
7-16	AIA	AIA	12.75	4.25	45c
1-2	AIA	AIA	15.00	5.00	55c



SET OF LETTERS.



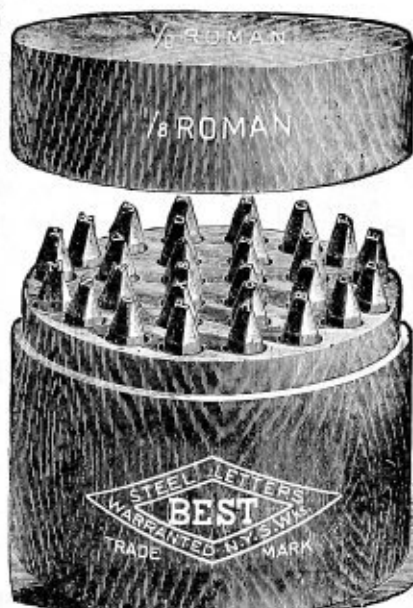
SET OF FIGURES.

Do not forget when ordering to specify exactly what you want.

Give every detail, also page number.

MACHINE-MADE STEEL FIGURES AND LETTERS.

A-1-32 " G-18
 B-1-20 " H $\frac{5}{32}$
 C-1-16 " I $\frac{3}{16}$
 D-1-12 " J $\frac{1}{4}$
 E-3-32 " K $\frac{5}{16}$
 F-1-10 " L $\frac{3}{8}$
 N $\frac{7}{16}$
 O $\frac{1}{2}$



Size	Figures Per Set of 9	Letters Per Set of 28	Letters or Figures Singly, Each
$\frac{3}{32}$ "	\$1 25	\$3 75	\$0 20
$\frac{1}{50}$ "	1 13	3 39	20
$\frac{1}{16}$ "	90	2 70	15
$\frac{1}{12}$ "	90	2 70	15
$\frac{5}{32}$ "	90	2 70	15
$\frac{1}{10}$ "	90	2 70	15
$\frac{1}{8}$ "	90	2 70	15
$\frac{5}{32}$ "	1 13	3 39	16

Size	Figures Per Set of 9	Letters Per Set of 28	Letters or Figures Singly, Each
$\frac{3}{16}$ "	\$1 25	\$3 75	\$0 18
$\frac{7}{32}$ "	1 40	4 20	20
$\frac{1}{4}$ "	1 50	4 50	20
$\frac{5}{16}$ "	1 75	5 25	25
$\frac{3}{8}$ "	2 50	7 50	35
$\frac{7}{16}$ "	3 50	10 50	45
$\frac{1}{2}$ "	4 50	13 50	50

Every set is put up in a neat, compact, dust-proof wooden box, properly labeled.

HAND-CUT
KARAT
STAMPS.



"A" With Sunk Letters.
 "B" With Raised Letters.
 Either style, 35c each.



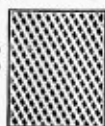
"C" With Sunk Letters.
 "D" With Raised Letters.
 Either style, 45c each.

DIE LETTERS AND FIGURES MADE TO ORDER.
Get our prices before placing your orders elsewhere.

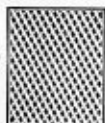
VAUTIER FILES.

No.

00



0



1



2



3



4



5



6



These have been made, and known to the trade for **Fifty Years**. Every possible means and method to improve these files are used and today they are unexcelled in **Cut, Temper, and Quality**, which means **Long Life and Best Service**.

"It Pays to Buy The Best"

VAUTIER FILES

Are Unquestionably

The Best

The illustrations on the **Left Hand** side of this page show the grades and character of cuts on **Flat** surfaced files.

The illustrations on the **Right Hand** side show the grade and character of cuts on **Round** surfaced files.

No.

00



0



1



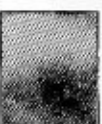
2



3



4



5



6

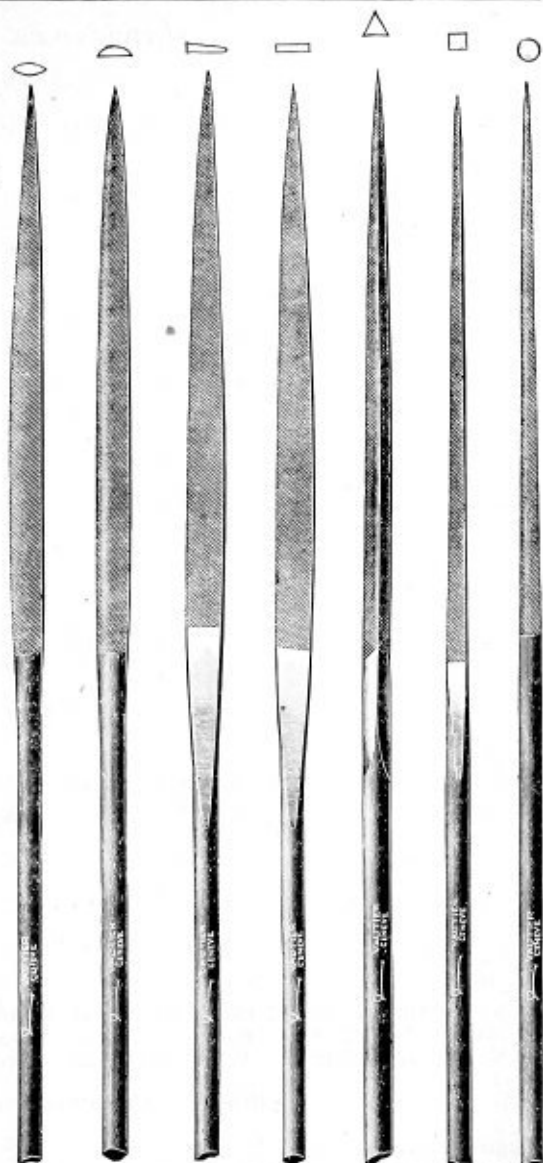


Always affix page number to every item ordered. it saves much time and avoids error.

VAUTIER JEWELERS'
NEEDLE FILES.

Exact Size Illustrations of
14 Centimeter Files.

"Not
What
You
Pay,
But
What
You
Get
For
What
You
Pay."



	Oval	Half Round	Knife	Flat	Three Square	Square	Round
Sizes		12 c-m.		14 c-m.			16 c-m.
Lengths		4 3/4"		5 1/2"			6 1/2"
Round Dozen		\$1 90		\$1 95			\$2 05
All Other Shapes are Dozen.		2 25		2 35			2 50

VAUTIER FILES.

All Prices are Per Dozen.

HAND FILES—These Are Made With One Safe Edge.

Lengths.....	2½"	3"	3½"	4"	4½"	5"	6"	7"	8"
Cut No's. 00 to 2	\$2 10	\$2 80	\$3 00	\$3 15	\$4 15	\$4 35	\$4 80	\$6 40	\$7 00
Cut No's. 3 & 4..	2 15	2 90	3 15	3 30	4 25	4 50	5 00	6 60	7 20
Cut No. 5.....	2 25	3 00	3 20	3 40	4 40	4 70	5 20	6 80	7 60
Cut No. 6.....	2 30	3 15	3 35	3 55	4 60	5 00	5 40	7 20	8 00

REGULAR AND NARROW PILLAR FILES.

Lengths.....	2½"	3"	3½"	4"	4½"	5"	6"	7"	8"
Cut No's. 00 to 2	\$1 95	\$2 60	\$2 75	\$2 95	\$3 85	\$4 00	\$4 30	\$5 50	\$6 50
Cut No's. 3 & 4..	2 00	2 65	2 80	3 00	3 90	4 15	4 40	5 70	6 70
Cut No. 5.....	2 00	2 70	2 90	3 10	4 00	4 25	4 55	6 00	6 90
Cut No. 6.....	2 00	2 70	2 90	3 10	4 00	4 25	4 55	6 00	6 90

Made with One or Two Safe Edges—Specify Which.

WARDING FILES.

Lengths.....	2"	2½"	3"	3½"	4"	4½"	5"	6"
Cut No's. 00 to 2	\$1 85	\$2 05	\$2 55	\$2 80	\$3 15	\$4 05	\$4 20	\$4 80
Cut No's. 3 & 4.....	1 95	2 10	2 60	2 90	3 30	4 20	4 40	5 00
Cut No's. 5 & 6.....	2 00	2 20	2 70	3 00	3 45	4 35	4 60	5 20

EQUALLING FILES.

Lengths.....	2"	2½"	3"	3½"	4"	4½"	5"	6"
Single Cut.....	\$1 75	\$1 90	\$2 40	\$2 65	\$3 00	\$4 00	\$4 30	\$4 60
Double Cut.....	1 85	2 05	2 50	2 80	3 20	4 20	4 55	4 90

Cut No's. 00 to 4. Thickness 12 to 24 English Standard Gauge.

Be Sure to Specify What You Want.

HALF ROUND FILES.

Lengths.....	2½"	3"	3½"	4"	4½"	5"	6"	7"	8"
Cut No's. 00 to 2..	\$2 40	\$2 90	\$3 05	\$3 20	\$4 10	\$4 35	\$5 00	\$6 80	\$7 80
Cut No's. 3 to 5..	2 50	3 00	3 15	3 70	4 65	4 95	5 60	7 60	8 75
Cut No. 6.....	2 65	3 15	3 60	4 20	5 10	5 30	6 15	8 20	9 55

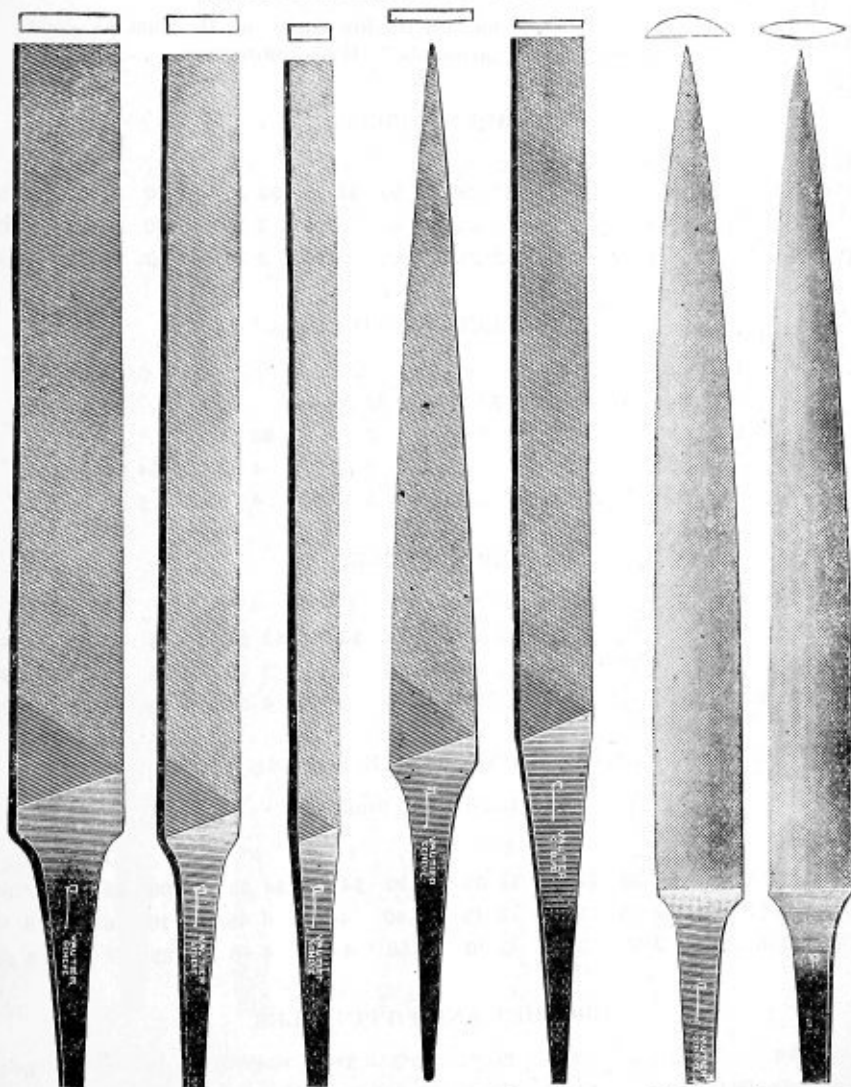
CROSSING OR OVAL FILES.

Lengths.....	2"	2½"	3"	3½"	4"	4½"	5"	6"
Cut No's. 00 to 2.....	\$2 00	\$2 30	\$2 80	\$3 25	\$3 70	\$4 70	\$5 00	\$5 60
Cut No's. 3 to 5.....	2 00	2 35	2 85	3 30	3 80	4 95	5 40	6 10
Cut No. 6.....	2 00	2 45	2 95	3 40	4 00	5 20	5 80	6 55

See Shapes on Opposite Page.

VAUTIER FILES.

"Modern ideas usually mark progress—but
Vautier Files have never been excelled."



Hand
or
Flat.

Regular
Pillar.

Narrow
Pillar.

Warding.

Equaling.

Half-
Round.

Crossing
or
Oval.

See Price List on Opposite Page.

VAUTIER FILES.

All Prices Are Per Dozen.

"Look out for the fellow who solicits his trade on 'the just as good for less money' principle." It's a subterfuge.

ROUND FILES.

Lengths.....	2½"	3"	3½"	4"	4½"	5"	6"	7"	8"
Cut No's. 00 to 2..	\$1 55	\$2 05	\$2 25	\$2 50	\$3 25	\$3 35	\$3 70	\$4 85	\$5 65
Cut No's. 3 to 5..	1 55	2 05	2 25	2 60	3 35	3 50	3 90	5 25	6 00
Cut No. 6.....	1 55	2 05	2 25	2 65	3 50	3 70	4 10	5 65	6 40

PARALLEL ROUND FILES.

Diameters ...	1/8"	3/16"	1/4"	3/8"
Length 3"	\$2 05	\$2 35	.....	.....
Length 4"	2 60	2 75	\$3 15	.....
Length 5"	3 55	3 55	4 10	\$4 80
Length 6"	3 90	3 90	4 60	5 40

SQUARE FILES.

Lengths.....	2½"	3"	3½"	4"	4½"	5"	6"	7"	8"
Cut No's. 00 to 2..	\$1 75	\$2 25	\$2 50	\$2 80	\$3 70	\$3 85	\$4 40	\$5 65	\$6 40
Cut No's. 3 to 5..	1 75	2 25	2 50	2 95	3 75	3 95	4 55	5 85	6 80
Cut No. 6.....	1 75	2 25	2 50	3 05	3 90	4 05	4 70	6 00	7 20

TAPER OR BLUNT, THREE SQUARE FILES.

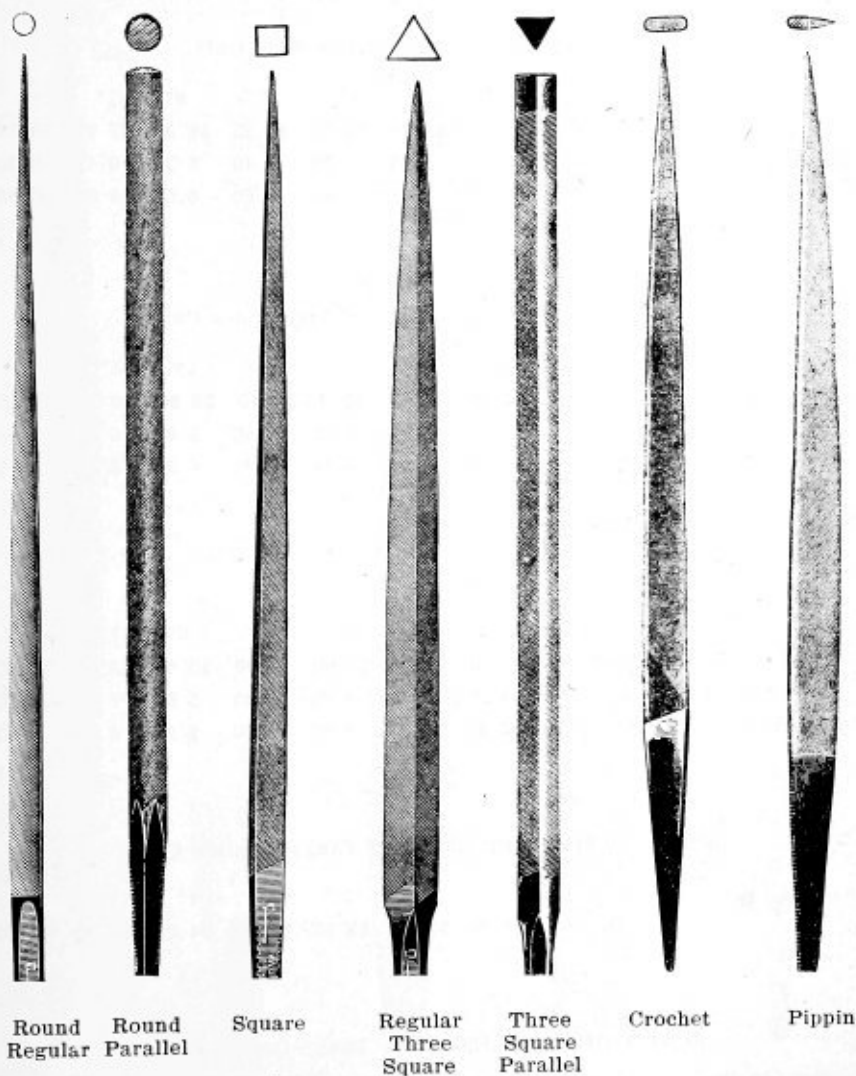
Regular or Slim.

Lengths.....	2½"	3"	3½"	4"	4½"	5"	6"	7"	8"
Cut No's. 00 to 2..	\$2 30	\$2 80	\$3 05	\$3 30	\$4 15	\$4 35	\$5 00	\$6 60	\$7 80
Cut No's. 3 to 5..	2 45	2 95	3 15	3 40	4 25	4 45	5 10	6 90	8 15
Cut No. 6.....	2 55	3 05	3 30	3 50	4 40	4 60	5 25	7 20	8 55

CROCHET AND PIPPIN FILES.

Lengths.....	2"	2½"	3"	3½"	4"	4½"	5"	6"
Cut No's. 00 to 2.....	\$1 95	\$2 30	\$2 80	\$3 20	\$3 50	\$4 40	\$4 60	\$5 40
Cut No's. 3 to 5.....	2 15	2 50	3 00	3 40	3 70	4 70	4 95	5 70
Cut No's. 6 to 8.....	2 35	2 70	3 20	3 60	3 90	5 00	5 25	6 00

VAUTIER FILES.



Note.—If Service is of value to you send us your orders.

VAUTIER FILES.

All Prices Are Per Dozen.

BARRETTE FILES—Cut on One Side Only.

Lengths.....	2½"	3"	3½"	4"	4½"	5"	6"	7"	8"
Cut No's. 00 to 2..	\$2 30	\$2 80	\$3 25	\$3 70	\$4 60	\$5 25	\$6 20	\$7 95	\$9 15
Cut No's. 3 to 5..	2 35	2 85	3 35	3 75	4 75	5 40	6 35	8 15	9 35
Cut No. 6.....	2 45	2 95	3 40	3 85	4 95	5 60	6 55	8 35	9 55

CANT OR BARRETTE FILES—Three Sides Cut.

Lengths.....	2"	3"	3½"	4"	4½"	5"	6"
Cut No's. 00 to 2.....	\$2 30	\$3 30	\$3 90	\$4 40	\$5 80	\$6 20	\$7 35
Cut No's. 3 to 5.....	2 30	3 35	4 00	4 60	6 00	6 40	7 60
Cut No. 6.....	2 30	3 45	4 10	4 80	6 20	6 55	7 75

KNIFE FILES.

Lengths.....	2½"	3"	3½"	4"	4½"	5"	6"	7"	8"
Cut No's. 00 to 2..	\$2 40	\$2 90	\$3 30	\$3 60	\$4 60	\$4 90	\$5 40	\$7 20	\$8 80
Cut No's. 3 & 4..	2 45	3 00	3 35	3 70	4 75	5 10	5 80	7 60	9 20
Cut No's. 5 & 6..	2 55	3 05	3 45	3 80	4 95	5 30	6 20	8 00	9 60

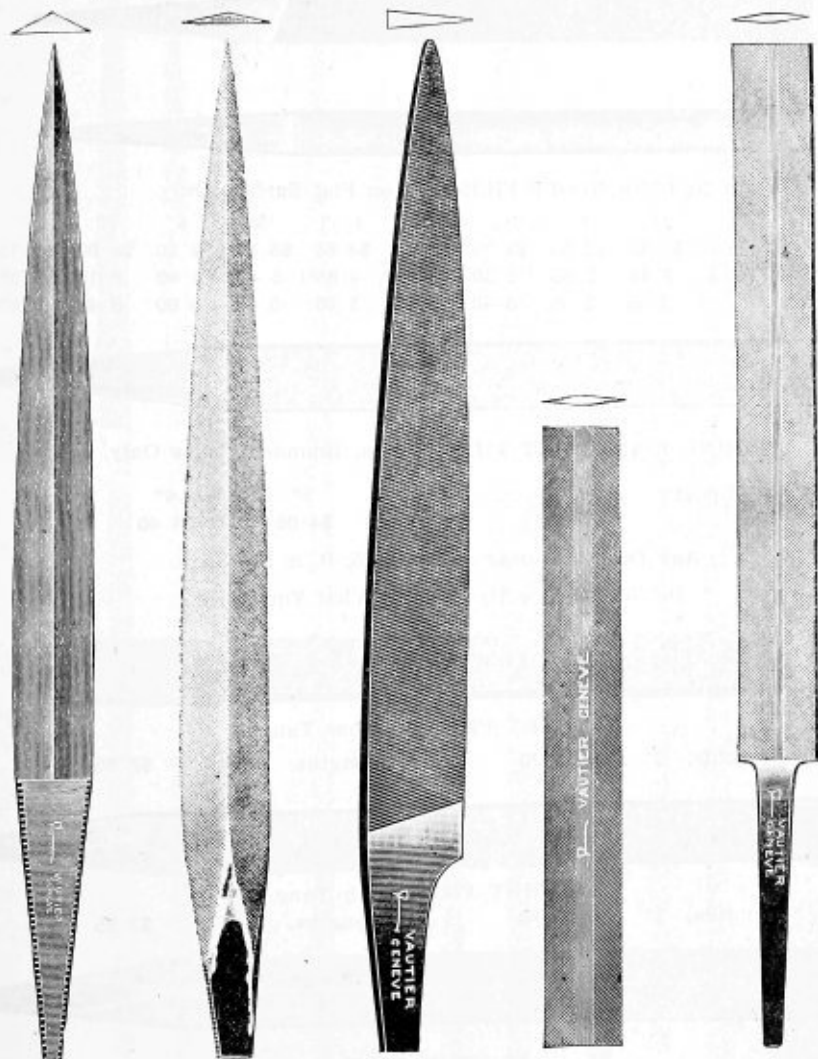
SCREW-HEAD FILES—Without Tangs—Double Cut.

Lengths.....	2"	2½"	3"	3½"	4"	4½"	5"
	\$2 25	\$2 45	\$3 15	\$3 50	\$4 00	\$4 50	\$5 00

SCREW-HEAD FILES—With Tang—Double Cut.

Lengths.....	2"	2½"	3"	3½"	4"	4½"	5"
	\$2 25	\$2 45	\$3 15	\$3 50	\$4 00	\$4 50	\$5 00

VAUTIER FILES.



BARRETTE
Cut on One
Side Only.

BARRETTE
Cut on Three
Sides.

KNIFE

SCREW-HEAD
Without Tang.

SCREW-HEAD
With Tang.

VAUTIER FILES.

All Prices Are Per Dozen.



ROUNDING-OFF FILE—Cut on Flat Surface Only.

Lengths.....	2½"	3"	3½"	4"	4½"	5"	6"	7"	8"
Cut No's. 00 to 2.	\$2 30	\$2 80	\$3 25	\$3 70	\$4 60	\$5 20	\$6 20	\$8 00	\$9 15
Cut No's. 3 to 5.	2 45	2 95	3 30	3 75	4 85	5 40	6 40	8 15	9 35
Cut No's. 6.....	2 55	3 05	3 40	3 85	5 00	5 60	6 60	8 40	9 60



ROUND EDGE JOINT FILE—Cut on Rounded Edges Only.

Lengths	4"	5"	6"
	\$2 70	\$4 05	\$4 40

Any Desired Thickness 14 to 25, B. & S. Gauge.

Be Sure to Specify Exactly What You Want.



RATCHET FILE—Without Tang.

Lengths, 3"	\$2 70	Lengths, 3½"	\$2 85
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RATCHET FILE—With Tang.

Lengths, 3"	\$2 70	Lengths, 3½"	\$2 85
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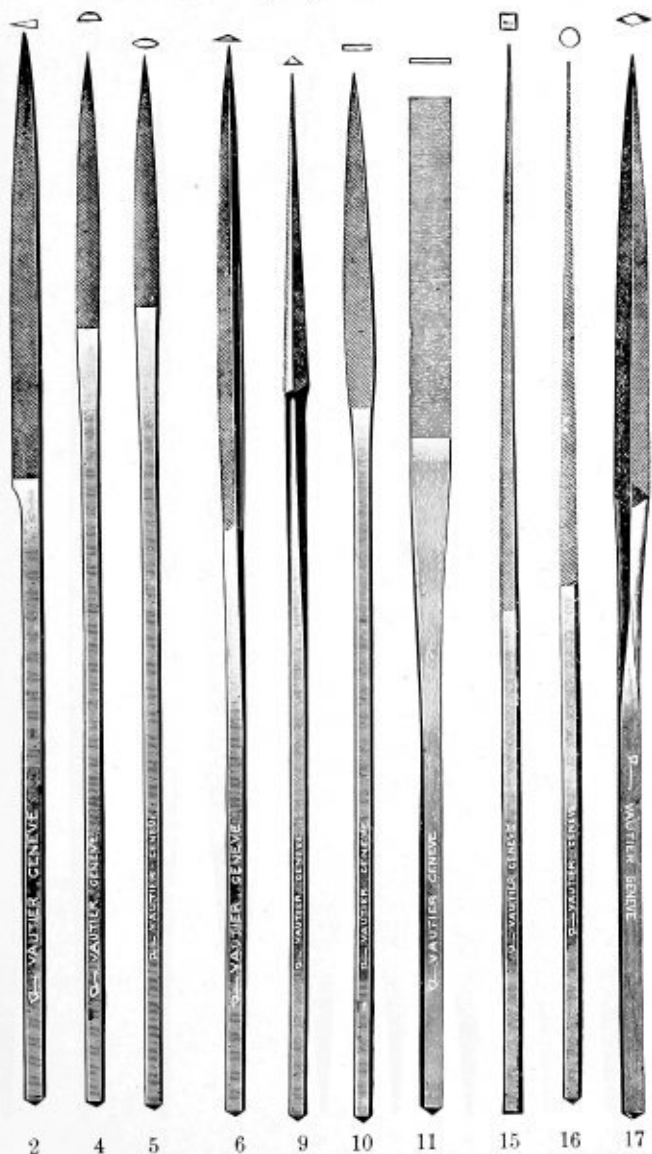


SLITTING FILE.

Lengths.....	2½"	3"	3½"	4"	4½"	5"	6"
Single Cut.....	\$2 30	\$2 80	\$3 20	\$3 50	\$4 75	\$5 20	\$6 20
Double Cut.....	2 45	3 15	3 50	4 00	5 20	5 70	6 80

VAUTIER ESCAPEMENT FILES—With Square Handles.

All Shapes \$2 35 Per Dozen.

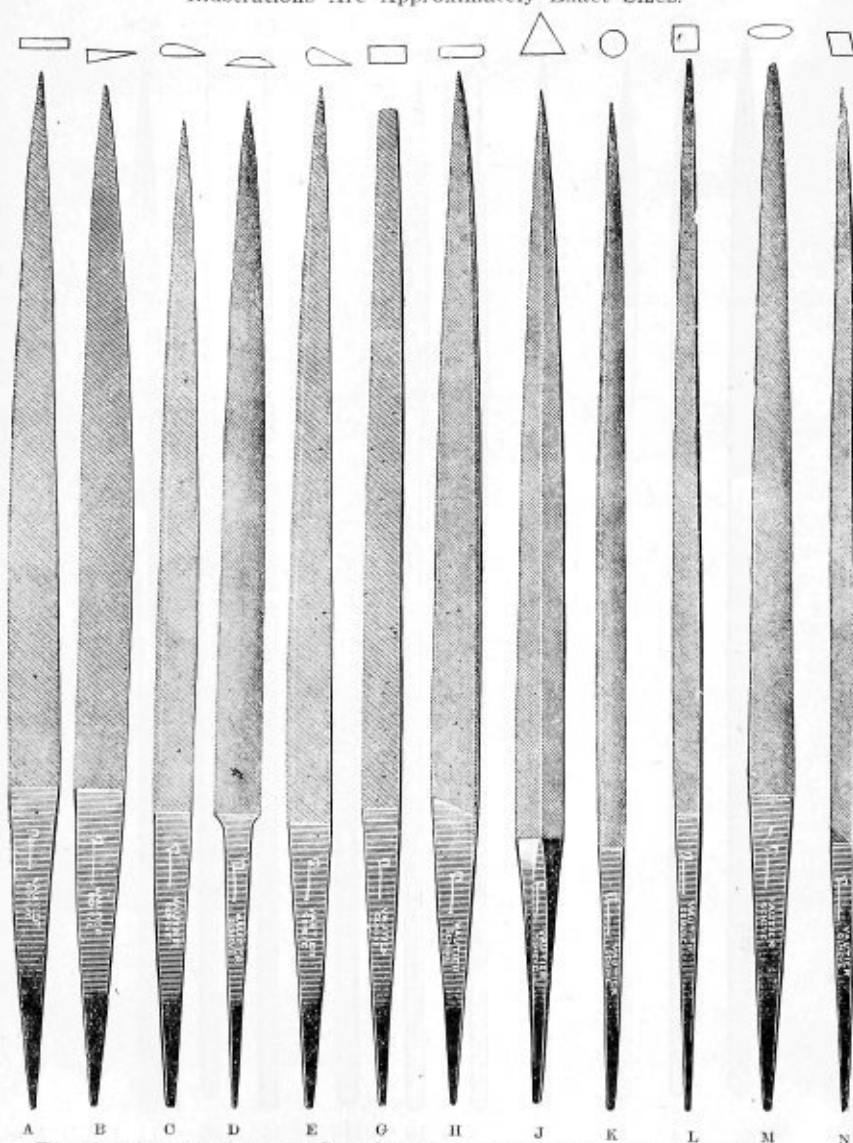


Be Sure to Order by Respective Number—Also Give Page Number.

VAUTIER DIE SINKERS' OR JEWELERS' FILES.

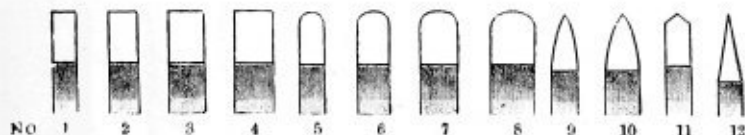
Any Shape \$2.80 Per Dozen.

Illustrations Are Approximately Exact Sizes.



We also furnish these in Complete Sets—12 Files 1 only of each shape.
Price per Set, \$2 80

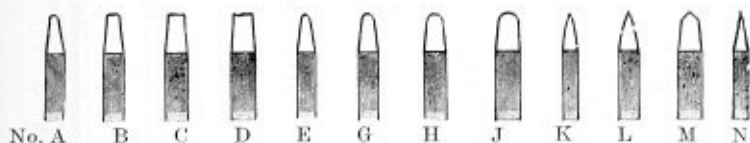
LAFAYETTE DIE SINKERS' CHISELS.



These illustrations show the tools, actual sizes of the working ends. The illustration at the right hand margin of this page shows the full size tool.

No. 13—Complete Set of 12 Tools 7" long.....\$3.50

Single Tools 35c each.



These illustrations represent the actual sizes of the working ends of the light set of tools.

No. R—Complete Set of 12 Tools, 5" long.....\$2 50

Single Tools 35c each.

Note.—All of the above tools are made of the Best Tool Steel. They are Hand Forged and carefully Tempered. They are finished ready for use.

Order by inspection numbers and avoid error, viz :

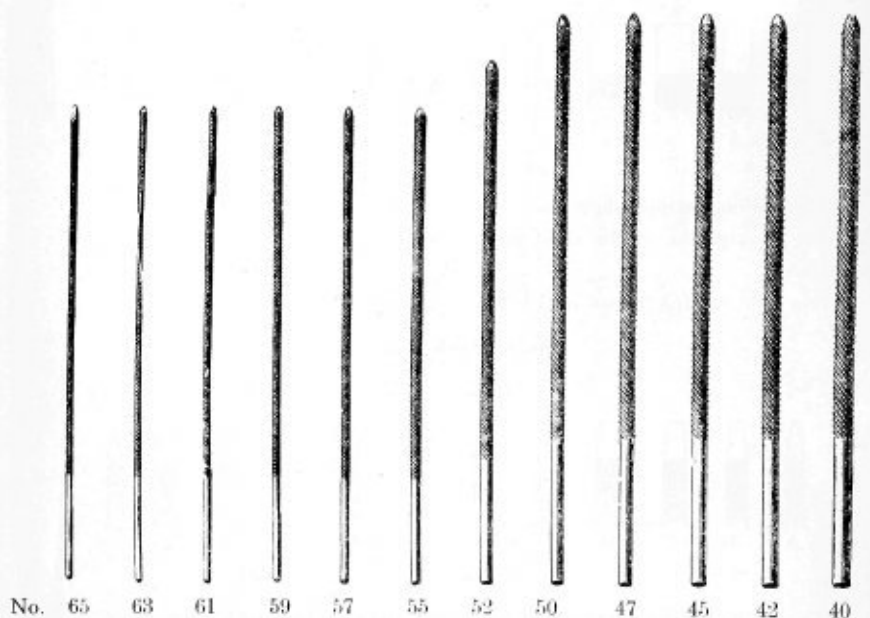
$\frac{1}{4}$ Doz., No. R—249;

or, 1 only, No. G—249.



BROACH FILES

For Jewelers and Watch Case Makers. These are sized by the Twist Drill Gauge. These are Uniform in Temper, Size and Cut.



No.	65	63	61	59	57	55	52	50	47	45	42	40		
													Per Gross	Per Dozen
All Sizes No. 40 to 52 inclusive.....													\$7 20	\$0 70
All Sizes No. 53 to 65 inclusive.....													6 00	60



Fine.



Medium.



Coarse.

Always Specify Which You Want

If you fail to find what you want in this Book—tell us and we will gladly furnish you information and prices.

FRENCH RIFFLE FILES AND RASPS.

"Goldenberg."

Style No. 1

2

3

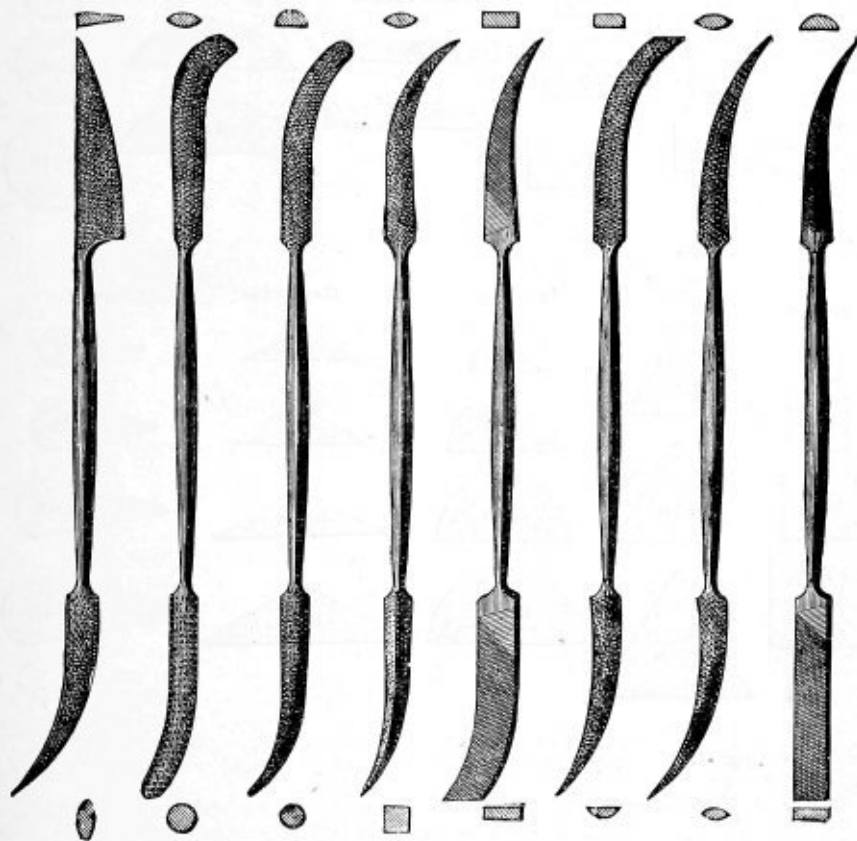
4

5

6

7

8



6"

7"

8"

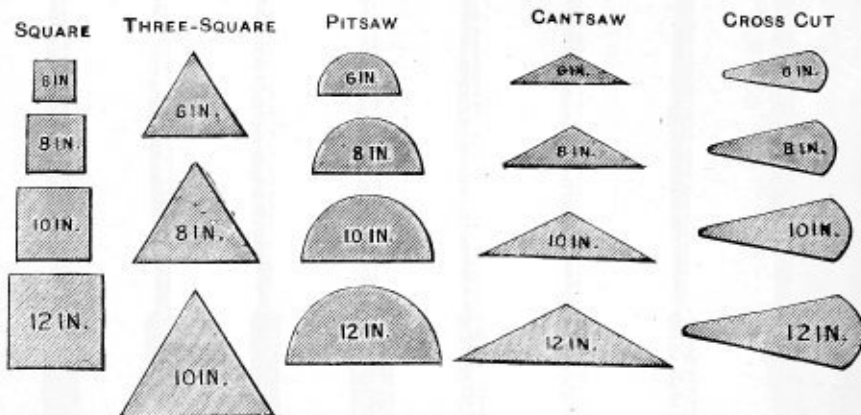
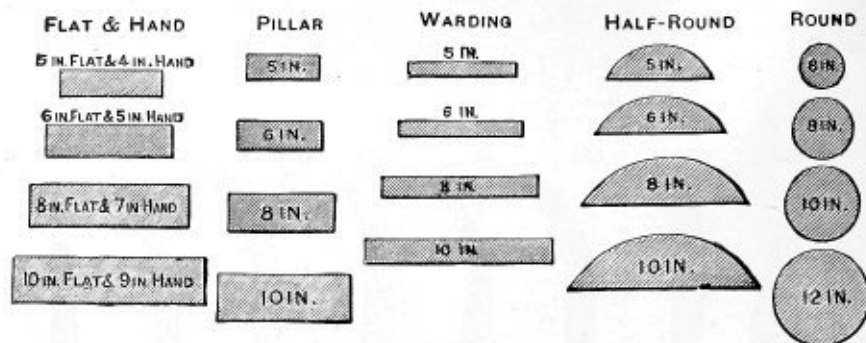
9"

10"

	Per. Doz.	Per Doz.	Per Doz.	Per Doz.	Per Doz.
Half Smooth,	\$4 60	\$4 90	\$5 30	\$6 00	\$6 70
Smooth,	4 90	5 30	5 80	6 60	7 50

Known as the Very Best in the Market.

PARALLEL FILES—For Use in the Machine Shown on Opposite Page.



For prices of these files see page 256 of this catalog.

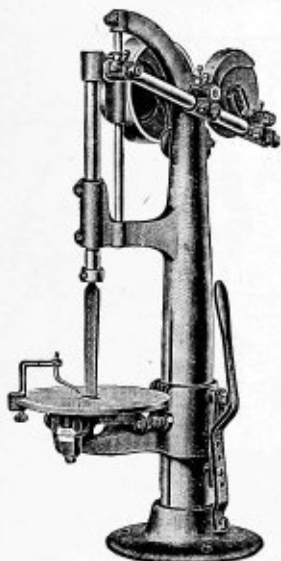
NOTE THIS FACT:

All parallel files advance 1 inch in the list, viz:

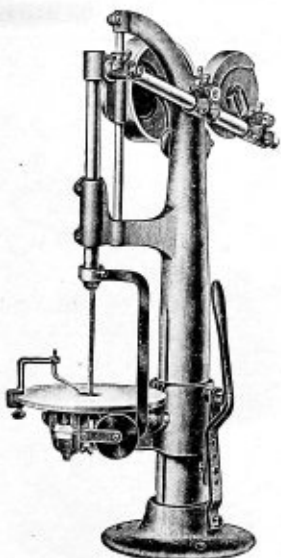
An 8-inch flat parallel file takes the list of a 9-inch file.

A 5-inch half-round parallel file takes the list of a 6-inch file,
etc., etc.

SIMPLEX COMBINATION BENCH FILER AND METAL HACK SAW.



Showing File in Position.



Showing Magazine Hack Saw Attachment in Position.

SPECIAL FEATURES ARE:

- 1st. Two Practical Machines in one. (A saving of space.)
- 2nd. Long range of stroke, 0 to 6", and two speeds, 150 and 250 per minute.
- 3d. Cut on down stroke instead of up, and a quick return as in hand filing.
- 4th. Quick adjustment of table, one nut.
- 5th. Quick change of files. (Almost as quick as the laying down and picking up a file.)
- 6th. Working parts all above the table. (Filings cannot get into and wear bearings.)
- 7th. Work can be removed and replaced by simply lowering table.
- 8th. Guide Roller independent of table, and adjustable with right and left screw.
- 9th. Magazine Saw Blade 84" long. (A great saving in saws and in time.)
- 10th. Self-contained, ready for business at once.

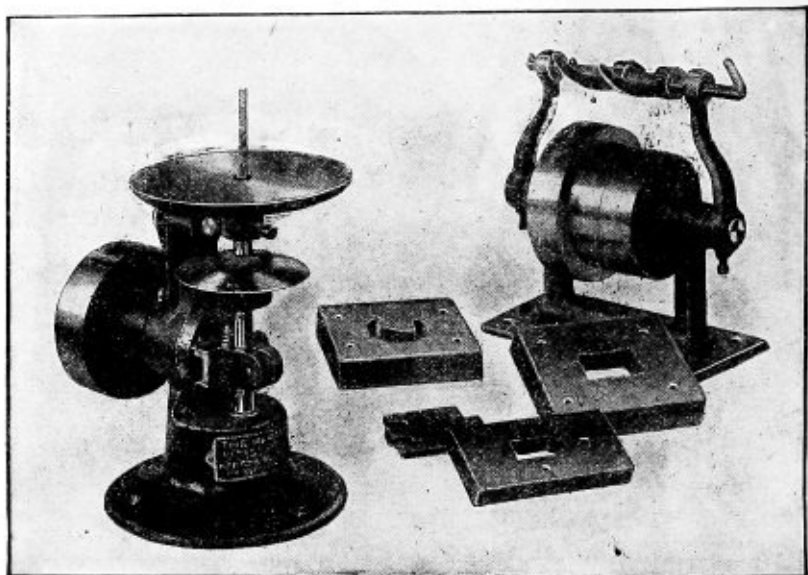
COST.

Its cost is \$85.00 F. O. B. Factory, complete with counter-shaft, belt-shifter, two work-hold-down attachments, six file-holding collars and magazine Hack-Saw Frame, with one 84-inch flexible back saw, $\frac{1}{4}$ inch wide, one raw hide, and one steel guide roller, three bushings, one jewelers' saw frame and saw, one guide roller finger for use with jewelers' saw and one wrench which fits all adjustment nuts.

Files for the machine shown and priced on opposite page.

THE HARTFORD BENCH FILING MACHINE.

Speed: 800 Revolutions Per Minute.



This Machine was designed to fill a long-felt want among makers of fine Dies, Tools, Models, Gauges, Templates, Jewelry, Dental and Surgical instruments and others, where accurate, rapid and economical filing is necessary.

As a labor saver, the Machine will pay for itself many times over in a short while wherever the need of fine filing exists. It is always ready, will file on any angle desired and will use the entire file.

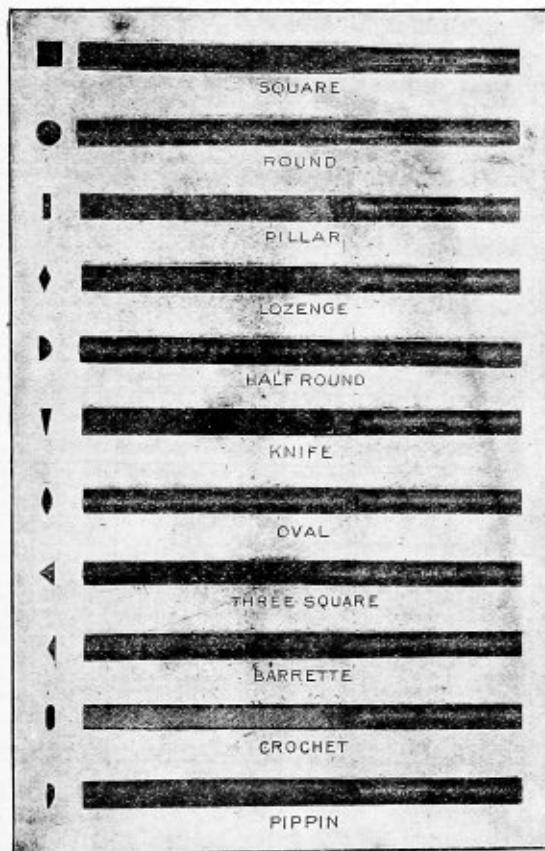
The spindle is provided with a $\frac{1}{4}$ -inch hole, $1\frac{1}{2}$ inches deep, to receive the file or file holder. The file holder is a piece of brass rod $1\frac{1}{4}$ inches long, which is placed in the hole at the top of spindle and is clamped to same by means of a collar and set-screw. The files are soldered to the top of the file holder, and the $1\frac{1}{2}$ -inch hole provides a means of raising the holder as the file becomes worn. A further means for using the entire file is provided by an adjustment in both the table and spindle.

Machine with Countershaft, \$25 00

Special Files for this Machine are shown on opposite page.

SPECIAL FILES

For the Hartford Bench Filing Machine Shown on the Opposite Page.



These Files are expressly made for the Hartford Bench Filing Machine.

They measure about $4\frac{1}{2}$ inches in the extreme.

File Cut part about $2\frac{1}{2}$ inches.

Finest quality steel used.
Tempered for machine use.

Cuts Nos. 0, 1, 2 and 3.
Specify which you want.

The various shapes are formed of steel the size of the Shank.

Files with $\frac{1}{4}$ " diameter Shanks, \$2 00 Dozen.

Files with $\frac{1}{8}$ " diameter Shanks, 1 75 Dozen.

Don't expect impossibilities of the Files nor the Machine. They are money-earners and can satisfy any reasonable man if properly handled.

Price List of Patent Increment Cut Files and Rasps

MANUFACTURED EXCLUSIVELY BY THE

NICHOLSON FILE COMPANY,

PROVIDENCE, R. I., U. S. A.

LIST OF NOV. 1, 1899.

As Adopted by the File Manufacturers' Association of the United States, Nov. 1, 1899.

PRICE PER DOZEN.

INCH. MILL AND ROUND.			FLAT.			INCH. SQUARE.			HAND AND PILLAR.			INCH. HLF. RD. & THREE SD.			WARDING.					
	Barbed	2d Cut	Smooth	Barbed	2d Cut	Smooth	Barbed	2d Cut	Smooth	Barbed	2d Cut	Smooth	Barbed	2d Cut	Smooth	Barbed	2d Cut	Smooth		
4	3.00	3.50	3.90	3.70	4.30	4.70	4	3.50	4.00	4.50	3.70	4.30	4.80	4	4.50	5.00	6.10	4.00	4.80	5.40
5	3.20	3.80	4.20	3.90	4.60	5.00	5	4.10	4.60	5.10	4.30	4.90	5.40	5	5.40	6.10	6.40	4.50	5.30	5.80
6	3.50	4.00	4.50	4.10	4.80	5.30	6	4.60	5.10	5.60	4.80	5.40	6.00	6	6.10	6.70	7.10	4.90	5.90	6.40
7	3.80	4.40	4.90	4.40	5.00	5.60	7	5.10	5.60	6.10	5.30	5.90	6.50	7	7.00	7.70	8.20	5.50	6.60	7.10
8	4.10	4.80	5.40	4.70	5.40	6.00	8	5.60	6.10	6.60	5.80	6.40	7.00	8	7.50	8.30	8.90	6.40	7.50	8.20
9	4.40	5.20	5.80	5.00	5.80	6.40	9	6.00	6.60	7.20	6.20	6.80	7.40	9	8.50	9.40	10.00	7.80	9.00	9.90
10	4.70	5.60	6.20	5.30	6.20	6.80	10	6.50	7.10	7.70	6.70	7.30	7.90	10	9.10	10.10	10.70	8.70	10.10	11.00
11	5.00	5.90	6.50	5.60	6.50	7.10	11	7.00	7.60	8.20	7.20	7.80	8.40	11	10.70	11.80	12.40	10.90	12.70	13.70
12	5.30	6.20	6.80	5.90	6.80	7.40	12	7.50	8.10	8.70	7.70	8.30	8.90	12	11.80	13.00	13.60	12.30	14.30	15.40
13	5.60	6.50	7.10	6.20	7.10	7.70	13	8.00	8.60	9.20	8.20	8.80	9.40	13	12.90	14.20	14.80	13.40	15.60	16.70
14	5.90	6.80	7.40	6.50	7.40	8.00	14	8.50	9.10	9.70	8.70	9.30	9.90	14	14.00	15.40	16.00	14.50	17.00	18.20
15	6.20	7.10	7.70	6.80	7.70	8.30	15	9.00	9.60	10.20	9.20	9.80	10.40	15	15.10	16.60	17.20	15.60	18.30	19.60
16	6.50	7.40	8.00	7.10	8.00	8.60	16	9.50	10.10	10.70	9.70	10.30	10.90	16	16.20	17.80	18.40	16.70	19.80	21.20
17	6.80	7.70	8.30	7.40	8.30	8.90	17	10.00	10.60	11.20	10.20	10.80	11.40	17	17.30	19.00	19.60	17.80	21.30	22.80
18	7.10	8.00	8.60	7.70	8.60	9.20	18	10.50	11.10	11.70	10.70	11.30	11.90	18	18.40	20.20	20.80	18.90	22.40	24.00
19	7.40	8.30	8.90	8.00	8.90	9.50	19	11.00	11.60	12.20	11.20	11.80	12.40	19	19.50	21.40	22.00	19.90	23.60	25.30
20	7.70	8.60	9.20	8.30	9.20	9.80	20	11.50	12.10	12.70	11.70	12.30	12.90	20	20.60	22.60	23.20	21.00	24.90	26.70

Best Blank, 2d. Cut, adv. 1 in.

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Best

These below 4 inches, not extended, take 4 inch price.

Single or Double, not specified, take next higher cut than price.

Round Smooth, double the price of standard.

Oval Round, double the price of standard.

All lengths above those listed, advance 25 per cent. on next lower inch price.

Cut not specified, take on regular blade, advance on each on respective blade and corner cut.

Round Smooth, not specified, advance one inch on respective blade and cut.

Single or Double, not specified, on regular blades take double cut price.

Round Smooth, double the price of standard.

Oval Round, double the price of standard.

All lengths above those listed, advance 25 per cent. on next lower inch price.

Cut not specified, take on regular blade, advance on each on respective blade and corner cut.

LABORATORY GLASSWARE.

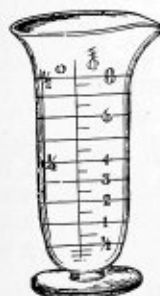
CHEMICAL FLASKS—FLAT BOTTOM. LIP FINISH.



	Each	Dozen
1 ounce, 30 cc.	\$0 15	\$1 50
2 ounce, 60 cc.	17	1 65
4 ounce, 120 cc.	20	2 00
6 ounce, 180 cc.	22	2 10
½ pint, 250 cc.	25	2 35
1 pint, 500 cc.	30	3 15
1 quart, 1000 cc.	45	4 25
½ gal., 2000 cc.	70	6 75
1 gal., 4000 cc.	1 50	15 00
2 gal., 8000 cc.	2 50	25 00
3 gal., 12000 cc.	4 00	40 00

GLOBE FLASKS—FLAT BOTTOM. LIP FINISH.

	Each	Dozen
1 ounce, 30 cc.	\$0 15	\$1 50
2 ounce, 60 cc.	17	1 65
4 ounce, 120 cc.	20	2 00
6 ounce, 180 cc.	22	2 10
½ pint, 250 cc.	25	2 35
12 ounce, 350 cc.	23	2 80
1 pint, 500 cc.	30	3 15
24 ounce, 700 cc.	40	3 75
1 quart, 1000 cc.	45	4 25
½ gal., 2000 cc.	70	6 75
1 gal., 4000 cc.	1 50	15 00
2 gal., 8000 cc.	2 50	25 00

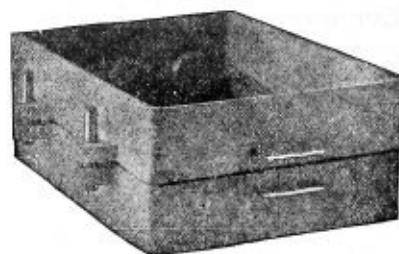
METRIC
MEASURE.APOTHECARIES'
FLUID
MEASURE.

	Dozen
5 cc. \$ 4 80	
10 cc. 5 50	
15 cc. 5 75	
30 cc. 6 75	
60 cc. 7 00	
120 cc. 8 50	
250 cc. 11 75	
500 cc. 18 00	
1000 cc. 31 00	

	Dozen
60 minims \$5 25	
120 minims 6 00	
½ ounce 5 25	
1 ounce 5 50	
2 ounces 6 50	
3 ounces 7 00	
4 ounces 7 50	
6 ounces 8 50	
8 ounces 9 60	
12 ounces 12 00	
16 ounces 14 50	
32 ounces 23 00	
64 ounces 44 00	



JEWELERS' FLASKS.



BEADS AT TOP
BOTTOM
AND PARTING.

(Inside Measure)

STRAIGHT SIDE FLASKS.

No.	Width	Length	Depth Over All	Price
A	3	3½	2	\$2 40
B	3¾	6¾	2	3 60
C	4	5½	2½	3 60
D	4	7	2½	3 60
E	4½	4	2½	3 20
G	4½	6½	2½	3 60
H	4½	7½	2½	3 60
J	4½	7½	3	3 60
K	6	9	2½	4 00
L	6	9	3	4 00
M	6	9½	3½	4 00
N	6	10	2½	4 00
P	6½	9½	2½	4 00
R	6½	9½	3	4 00



Straight
Sides.



V Shape
Sides.

STRAIGHT SIDES.

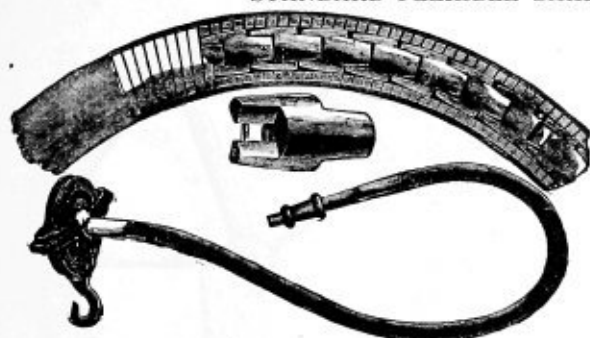
No.	Dimensions	Each
1	2" x 2¾"	\$1 25
2	2½" x 2¾"	1 90
3	4" x 5"	2 40
4	4" x 6"	2 90

V SHAPE SIDES.

No.	Dimensions	Each
5	2" x 2¾"	\$1 25
6	2½" x 2¾"	1 90
7	4" x 5"	2 40
8	4" x 6"	2 90

Use our new system in writing orders. Viz.: 1 only H-258.

STANDARD FLEXIBLE SHAFTS.



The Gem Unit Shaft Core is composed of segments made of gun metal, encased in square steel wire, made and tempered especially for this specific purpose, that in turn is covered with leather or specially prepared rubber, warranted to withstand 350 degrees of heat and to be unaffected by the soft grease

used in lubricating the core.

Do Not Fail to state whether you wish the Shaft to run right or left handed, or both directions.

Selling Numbers.....	3	4	4½	5	6	8
Diameter of core in inches.....	½	⅝	¾	⅞	1	1¼
Length of shaft in feet.....	5	6	7	7	8	8
Price complete, as per cut.....	\$30 00	40 00	45 00	50 00	60 00	80 00
Price per foot, extra.....	3 00	3 75	4 00	4 50	5 25	8 25



Coates Unit Shaft is driven by a square spheroid, the strongest drive known. Each unit is made of hardened steel. The pin is used simply to keep the unit together and allow the proper amount of shuck.

This Flexible Shaft runs inside of a steel spring which in turn is covered with leather.

Selling Numbers	11	22	33	44S
Diameter of core in inches.....	⅝	¾	⅞	1
Length of shaft in feet.....	3	5	6	6
Price of plain shaft with pulley.....	\$16 00	\$18 00	\$30 00	\$50 00

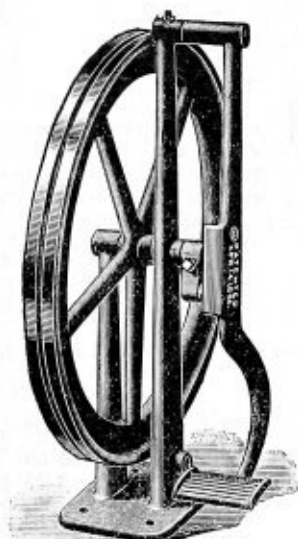
STOW FLEXIBLE SHAFT.

This shaft is too well known to need comment from us. Mr. N. Stow is the original inventor. The shaft is made of coiled springs. The cores can be wound to left as well as right handed, but neither will transmit their maximum power when run backward.

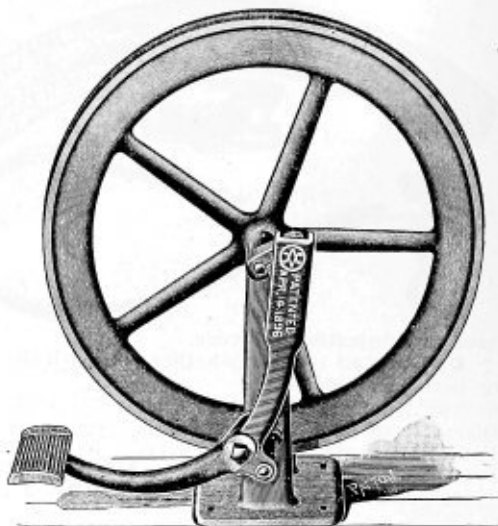
Selling Numbers	0S	1S	2S	3S	4S
Diameter of core in inches.....	¼	⅝	¾	½	⅝
Length of Shaft in feet.....	3	3½	4	5	6
Price with pulley.....	\$16 00	\$18 00	\$25 00	\$30 00	\$40 00

Always affix page number to item number.

IMPROVED FOOT WHEELS.



Style No. 3. (Glib)
\$6 50



Style No. 4. (Glist)
\$6 50

It has the hardened crank shaft, the two fiber rollers, which reduce the friction, and the improved treadle, which allows plenty of room for the foot.

The watchmaker will not be so much interested in this wheel, unless he wishes to stand at his work. It is an excellent wheel to use in connection with a polishing head.

Details of Above Wheels.	{	Diameter of Wheel, 20".
		Weight of Wheel, 40 lbs.
		Total Weight, 65 lbs.
		Gross Weight, Domestic Shipment, 75 lbs.

BALL-BEARING FOOT WHEELS.

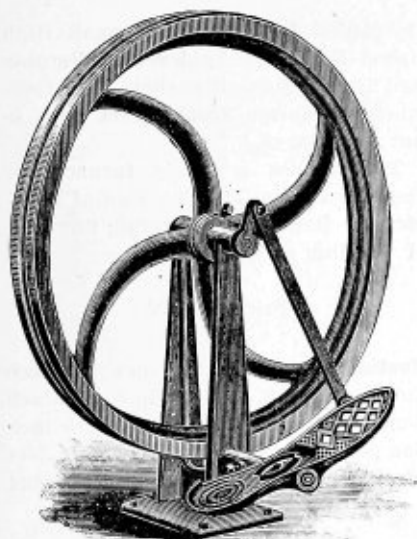
No. 13. (Glode)

No. 14. (Glere)

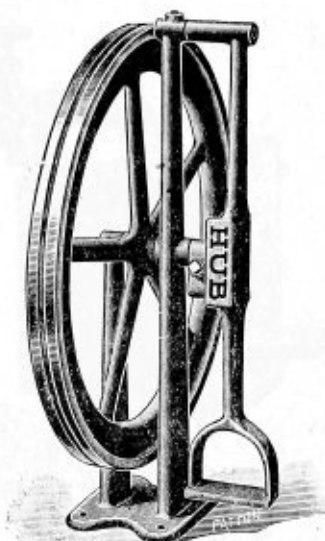
Either of above styles (Ball Bearings), \$7 00 each.

These Wheels have hardened bearings, with hardened steel balls—reducing the friction to a minimum. If this style is wanted Do Not Fail when ordering to specify Ball Bearing, and give number—3 or 4.

PLAIN FOOT WHEELS.



No. 1. Grooved Face.
\$3 00



No. 3. Hub.
\$6 00

This is the common wheel so long in use. It is well made, and is a little heavier than the average wheels of this class.

Price (Gleed), \$3 00.
Diameter of Wheel, 18".
Weight of Wheel, 20 lbs.
Total Weight, 33 lbs.
Gross Weight, Domestic Shipment, 37 lbs.

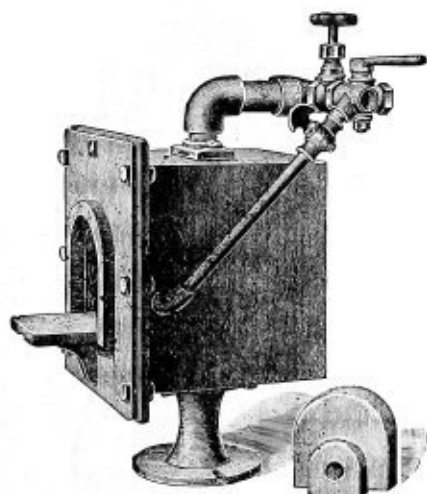
This is the old and universally-liked style of foot wheel. While the crank shaft is not hardened, nor are the general improvements of other wheels used, it is equally as well made.

Price (Glen), \$6 00.
Diameter of Wheel, 20".
Weight of Wheel, 40 lbs.
Total Weight, 60 lbs.
Gross Weight, Domestic Shipment, 70 lbs.

No. 1.
GROOVED FACE
WHEEL.

No. 3.
HUB WHEEL.

GAS FORGES.

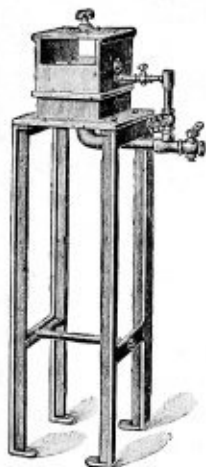


Adapted for Hardening small High Speed Steel tool holder bits, Forging and Dressing small carbon steel tools where seclusion from direct heat is not necessary.

This makes a handy furnace for Heating Rivets, Heating End of Rods, etc., for Bending or Forging, fine jobs of Welding or Brazing.

Price, \$16 00

Heating Space6 inch x 3 inch
Entrance (both ends) .3 inch x 3 inch
Bench Space9 inch x 9 inch
Gas per hour30 cubic feet
Air Pressure required.....1 pound



FLAT STOCK OR BAR ANNEALER.

This furnace is used by Manufacturing Jewelers, Watch Case Makers, Silversmiths and Tubing Factories for annealing flat stock, Bars of Metals, Tubing, etc., in long lengths, by drawing same through furnace from back to front, the heat striking work from the bottom.

For annealing or heating long rods or bars of steel, either solid or in tubing form for bending, forming, stamping, etc. This makes an economical furnace, as there is no waste heat or time lost in heating, and the work is heated uniform at any degree of heat by adjusting the gas and air valves to suit the work.

The following are our regular sizes. Smaller or larger sizes to order.

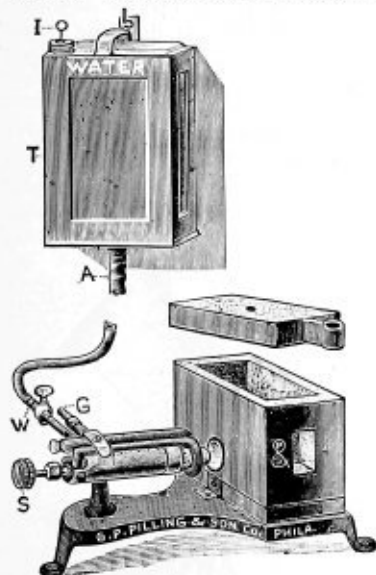
No.	Heating Space	Gas Per Hour	Floor Space	Weight, Crated	Price
1	3"x 9"	45 cub. ft.	10"x12"	75 lbs.	\$16 00
2	5"x 9"	50 cub. ft.	10"x12"	80 lbs.	19 00
3	7"x 9"	60 cub. ft.	10"x12"	85 lbs.	23 00
4	10"x11"	80 cub. ft.	15"x15"	175 lbs.	48 00

REVELATION GAS FORGES.

No Foot Power or Power Blower Needed.

One quart of water will furnish sufficient air pressure for a good size blast for one whole day.

Have you ever worked a Foot Blower twelve to fifteen minutes when it seemed to be an hour? Pushing, pulling, sweating, swearing, and losing your temper. If so, you will appreciate the Revelation Furnace.



No. 3. \$12 00

Including Water Tank, one gallon capacity.

Tubing extra, 15c per foot.

—FOR—

ANNEALING.

Light and heavy annealing—for instance, a steel die block 4x2x1 inches in 10 minutes.

FORGING.

All kind, from small dies to the most delicate Engravers' tools.

HARDENING.

Large or small, within capacity, work quickly hardened.

TEMPERING OF ALL DESCRIPTIONS.

Rectangular fire brick heat chamber, inside dimensions 5 by 2½ by 3 inches.

The Revelation can be used in the factory or home where no power of any kind is obtainable.

The Revelation requires no attention while in use. It works by itself. Water will furnish the same result as heretofore obtained by an air compressor or bellows and does away with their use and the expense of running the same.

The water receptacle is suspended from the ceiling at a height of from seven to eight feet (at least) above the furnace, the water is led through a rubber tubing into the steam generator attached to the burner and there converted into steam, which in turn is superheated and becomes dry; the high steam pressure draws and forces the air into the mixing chamber, thereby producing a strong and steady blast.

Read details on page 267.



No. 55 with Shield.

THE CHAMPION LANCASTER RATCHET LEVER FORGE.

Size of Hearth 18 Inches in Diameter.

Fan 8 inches in Diameter.

No. 55 Lancaster Ratchet Lever Forge is made with double ratchet, strong and substantial, used by Bridge, Boiler and Tank Builders, Miners, Prospectors, Elevated Railroad Builders, Farmers, etc.

No. 55 Champion Lancaster Ratchet Lever Forge with Shield. Hearth 18 inches in diameter, height 30 inches, fan 8 inches, weight 75 lbs.,

\$24 00

THE CHAMPION LANCASTER RATCHET LEVER FORGE.

Size of Hearth 18 Inches in Diameter.

Fan 8 Inches in Diameter.

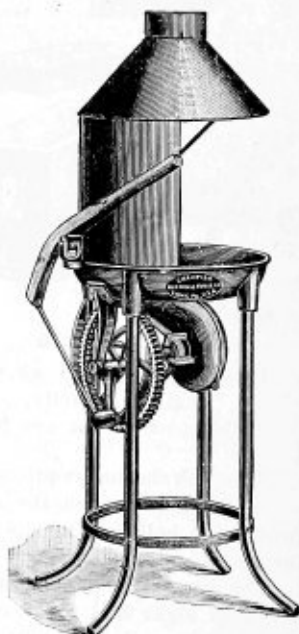
No. 56 Lancaster Ratchet Lever Forge is made with double ratchet, strong and substantial, used by Bridge, Boiler and Tank Builders, Miners, Prospectors, Elevated Railroad Builders, Farmers, etc.

No. 56 Champion Lancaster Ratchet Lever Forge with Half Hood. Hearth 18 inches in diameter, height 30 inches, fan 8 inches, weight 75 lbs.,

\$30 00

No. 57 Champion Lancaster Ratchet Lever Forge with Closed Hood. Hearth 18 inches in diameter, height 30 inches, fan 8 inches, weight 80 lbs.,

\$30 00



No. 56. Made with Half Hood Only.

Never fail to affix page number to the item number when ordering from this catalog, viz.: 1 only No. 56—264. By so doing we cannot err.

CYCLONE TOOL FORGE.

Always Arranged for Illuminating Gas Unless Otherwise Specified.

Its usefulness extends to all operations of heating and hardening lathe tools, end mills, milling cutters, dies, case-hardening, etc., with greater facility and perfection than with an ordinary forge. It is compact and sufficiently powerful to heat an iron or steel bar one inch in diameter, and yet can be controlled to heat and temper the smallest piece without injury.

This Tool Forge consists of an iron-bound fire-brick casing with an opening through it which contains an annular chamber, giving the flame a reverberatory action.

It rests upon a cast-iron frame twelve inches high. The frame-work also supports the Blowpipe and two fire-brick hearths on either end of the Forge. By having the hearth on both ends, two men can work at the Forge at the same time.

The combustion is absolutely perfect and instantaneous. Both air and gas passages are controlled by cocks, thus enabling the operator to produce any intensity of heat desired.



No. 19. Opening 3"x2½".

This Forge should be connected with a power-blower for large tool-rooms, but it can be operated successfully with No. 10B Foot Blower.

No. 19, with casing nine inches long, seven inches wide and six inches high and an opening through it three by two and one-half inches square. Height over all, 18 inches.

No. 19A, with casing nine inches long, ten and one-half inches wide by nine inches high and an opening through it six inches wide by five inches high to accommodate large dies and cutters. Height over all, 21 inches.

The Forge can be arranged to operate with natural gas and will be so supplied on order.

It will be fitted for use with gasoline gas at same price as natural gas.

No. 44 Gasoline Gas Generator is recommended where a piped supply of gasoline gas is not available.

Prices.

No. 19.	Cyclone Forge, small size, illuminating gas	\$10 00
No. 19.	Cyclone Forge, small size, for natural gas	12 00
No. 19A.	Cyclone Forge, large size, illuminating gas	16 00
No. 19A.	Cyclone Forge, large size, for natural gas	18 00
No. ¼.	B. S. Root's Blower	20 00
No. 1.	Crowell Blower	20 00
No. 10B.	Foot-Blower	9 50
No. 44.	Gasoline Gas Generator	15 00
No. 19.	Body alone	4 50
No. 19A.	Body alone	8 50
No. 19.	Hearth alone	60
No. 19A.	Hearth alone	75

FUNNELS.



PRESSED GLASS FUNNELS—Plain.

Number			Per dozen
1	$\frac{1}{8}$ pint	$2\frac{5}{8}$ inches diameter	\$1 00
2	$\frac{1}{4}$ pint	$3\frac{1}{2}$ inches diameter	1 10
3	$\frac{1}{2}$ pint	$4\frac{1}{4}$ inches diameter	1 60
4	1 pint	$5\frac{1}{2}$ inches diameter	2 40
5	1 quart	7 inches diameter	4 00
6	$\frac{1}{2}$ gallon	$8\frac{1}{2}$ inches diameter	5 25

PRESSED GLASS FUNNELS—Ribbed.

Especially Adapted for Use in Filtering.

Number			Per dozen.
7	$\frac{1}{8}$ pint	$2\frac{5}{8}$ inches diameter	\$1 00
8	$\frac{1}{4}$ pint	$3\frac{1}{2}$ inches diameter	1 10
9	$\frac{1}{2}$ pint	$4\frac{1}{4}$ inches diameter	1 60
10	1 pint	$5\frac{1}{2}$ inches diameter	2 40
11	1 quart	7 inches diameter	4 00
12	$\frac{1}{2}$ gallon	$8\frac{1}{2}$ inches diameter	5 25
13	1 gallon	11 inches diameter	10 00



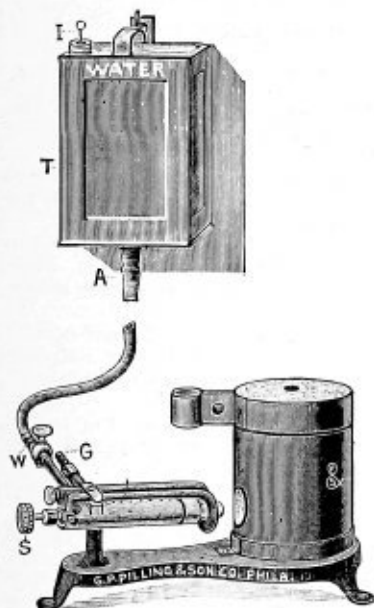
COPPER FUNNELS.

Tin Lined. Seamless Bodies.

Number		Per dozen
14	$\frac{1}{2}$ pint	\$ 7 20
15	1 pint	8 25
16	1 quart	9 60
17	$\frac{1}{2}$ gallon	13 80
18	1 gallon	22 50

REVELATION GAS MELTING FURNACE.

The use of a Foot-Blower or a Power-Blower is no longer needed.



No. 1. \$12 00

Including Water Tank, one
gallon capacity.

Tubing extra, 15c per ft.

Simply fill the Tank with one gallon of water and hang it on the wall fully seven feet above the furnace. Connect same with the Burner by a $\frac{3}{8}$ -inch Rubber Tube and the water will furnish both pressure and heat by the aid of a Special Patented Burner.

Round fire brick heat chamber, with inside diameter of two inches by depth of three inches.

Size No. 2. \$17 00

This furnace is larger than the No. 1. The fire pot in the No. 2 size is $3\frac{1}{2}$ inches in diameter and 5 inches deep.

NOTHING BUT GAS AND WATER.

Science has at last produced a Gas Blast whereby a small quantity of water will furnish the same result as heretofore obtained by an air compressor or bellows and does away with their use and the expense of running the same.

The economy can readily be seen when one quart of water will furnish sufficient air for a good size blast for one whole day, and giving a steady, uniform heat.

Read details on page 263.

GAS MELTING FURNACES.

Requiring Power or Foot-Power Blast.

The casing in these Furnaces holds the heat so perfectly that most refractory substances can be fused with ease.

The No. 40 Furnace is Used Extensively.

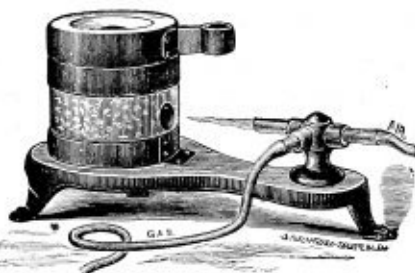
Burns Illuminating Gas Only.

For melting gold and silver. The crucible will hold about ten ounces of gold.

The power which can be obtained is far beyond what is required for most purposes.

Gas from a $\frac{3}{8}$ -inch supply pipe will work it efficiently. About ten cubic feet of gas per hour is sufficient for most purposes.

The No. 9A or No. 10A Foot-Blower will operate the furnace satisfactorily. No. 40 takes No. 00 Crucible.



No. 40.

Outside dimensions of clay parts $4\frac{1}{8}$ inches by $5\frac{3}{8}$ inches high. Pot inside $2\frac{5}{8}$ inches diameter by $2\frac{1}{2}$ inches deep. Furnace on stand $6\frac{1}{2}$ inches high over all.

Prices.

No. 40.	Fletcher's Crucible Furnace, with one No. 00 Crucible, without Foot-Blower	\$3 00
No. C.	Extra Furnace Body, for No. 40 Furnace	75
No. D.	Extra Furnace Cover, for No. 40 Furnace	35
No. E.	Extra Furnace Body and Cover, for No. 40 Furnace	1 10
No. G.	Burner only, for No. 40 Furnace	1 00
No. H.	Stand, less burner, for No. 40 Furnace	90
	Plumbago Crucibles, No. 00, each	20

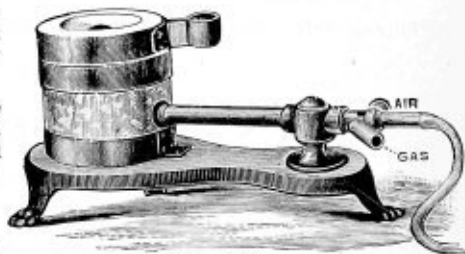
The Burner of the No. 40A Furnace is constructed to operate with illuminating gas, natural gas or gasoline gas without alteration.

A steady blast of air will give the best results. No. 9A or No. 10A Foot-Blower is recommended for this furnace.

No. 40A takes No. 00 Crucible.

Same dimensions as No. 40.

Gas supply pipe should be $\frac{3}{8}$ inch.



No. 40A.

Prices.

No. 40A.	Crucible Furnace, with one No. 00 Crucible, without Foot-Blower	\$3 50
No. J.	Extra Burner, for No. 40A Furnace	1 50

Extra parts, prices same as for No. 40. See above list.

Be sure to affix page number to item number.

GAS MELTING FURNACES.

Requiring Power or Foot-Power Blast.

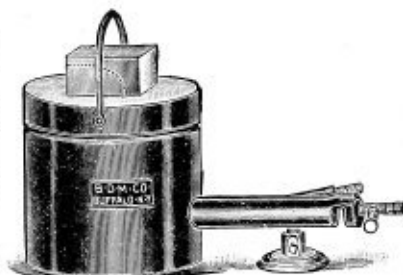
May be used with illuminating gas, natural gas or gasoline gas without alteration.

No. 41 takes No. 1 Crucible, capacity 2 pounds; No. 41A takes No. 3 Crucible, capacity 6 pounds.

No. 41 takes No. 9A or No. 10A Blower. No. 41A takes No. 9B or No. 10B Blower.

No. 41 pot and cover dimensions; outside $6\frac{1}{2}$ inches diameter by $7\frac{1}{4}$ inches high; inside $3\frac{1}{2}$ inches deep by $3\frac{1}{2}$ inches in diameter.

No. 41A pot and cover dimensions; outside 9 inches diameter by 10 inches high; inside $5\frac{1}{2}$ inches deep by $4\frac{3}{4}$ inches diameter.



No. 41 and 41A.

Prices.

No. 41. Crucible Furnace, with one No. 1 Crucible, without Foot-Blower, \$4 50
 No. 41A. Crucible Furnace, with one No. 3 Crucible, without Foot-Blower, 7 00

Prices for Separate Parts.

No. K.	Furnace Body, for No. 41 Furnace	\$2 25
No. L.	Furnace Body, Cover and Dome, for No. 41 Furnace	3 00
No. M.	Furnace Body, for No. 41A Furnace	4 00
No. N.	Furnace Body, Cover and Dome, for No. 41A Furnace	5 00
No. P.	Crucible Support, each, for No. 40 or 41A Furnace	15
No. R.	Burner, for No. 41 Furnace	1 50
No. S.	Burner, for No. 41A Furnace	2 00



No. 141.

This Furnace is supplied with muffle fittings, and can be used either as a crucible or muffle furnace. Takes a No. 6 Crucible, holding 12 pounds of metal. The cover has a projection on one side, which will reduce the height of the cavity of the furnace about two inches, or to the proper size to receive the muffle or a No. 3 Crucible.

No. 141 pot and cover outside 9 inches diameter by 11 inches high; inside 7 inches deep by $6\frac{1}{4}$ inches diameter.

Prices

No. 141.	Crucible and Muffle Furnace, for gas, with Muffle and No. 3 Crucible, without Foot-Blower	\$11 00
No. 141.	Fire Clay Body, Cover and two Plugs only	7 50
	Extra Plumbago Muffles, $3\frac{1}{2} \times 2\frac{3}{4} \times 6\frac{1}{4}$ in.	1 50

Use the No. 9 b or No. 10 b Foot-Blower with this Furnace. The gas supply must be from a $\frac{1}{2}$ -inch or, still better, a $\frac{3}{4}$ -inch pipe and clear way tap.

Always affix page number to item number.

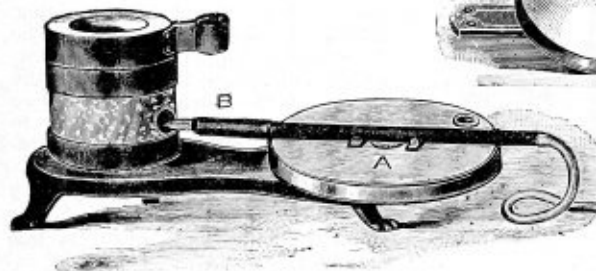
GASOLINE GAS OUTFITS.

For small furnaces of high temperatures, where gas is not available. Capacity of Generator, about one quart of gasoline. Size, 4x4x10 inches. The 74 degree gasoline, such as is used in vapor stoves, is suitable for use in this Generator. Lower grades, usually sold as naphtha, do not give good results.

No. 40 a Furnace, No. 40 c Generator, No. 9 a Foot-Blower and Tubing, complete for use\$16 50
Gasoline Gas Generator No. 40 c, alone 6 00

LARGE SIZE.

No. 44. Gasoline Gas Generator, alone\$15 00
No. 41. (2 lb.) Furnace, No. 9 a Foot-Blower, No. 44 Generator, No. 1 Crucible and Tubing, complete, for gasoline gas 26 50
No. 41 a. (6 lb) Furnace, No. 9 b Foot-Blower, No. 44 Generator, No. 3 Crucible and Tubing, complete, for gasoline gas 31 50



KEROSENE BLAST
FURNACE
No. 40 B.

No. 40 b. Crucible Furnace, with one No. 00 Crucible, without Foot-Blower\$5 00
No. 40 b. Kerosene Burner, separately 3 00
Plumbago Crucibles, No. 00, each..... 20



Use our New System in ordering from this Catalog. It saves time.

LITTLE GIANT MELTING FURNACE.

The Air Pressure being steadily maintained at one pound, the furnace will melt 10 ounces of copper in 10 minutes with "City Gas."

The blast may be supplied from a positive blower, or a foot bellows when power is not available.

The Heating Chamber consists of two parts: the "cylinder" D and "bottom" C. The "burner ring" B is inserted between C and D and protected from heat by a recess in both, which enclose and cover the burner ring.

The "bottom" C rests upon a cast iron base A, the iron frame H holds the cylinder D in position, and serves as a support for the cover E when displaced to insert the crucible, or to remove it. A and H are connected by the bolts K, and when the wing nuts K are unscrewed, the furnace can be taken apart. G is the gas connection. All parts are interchangeable and can be easily replaced.

CAPACITY.

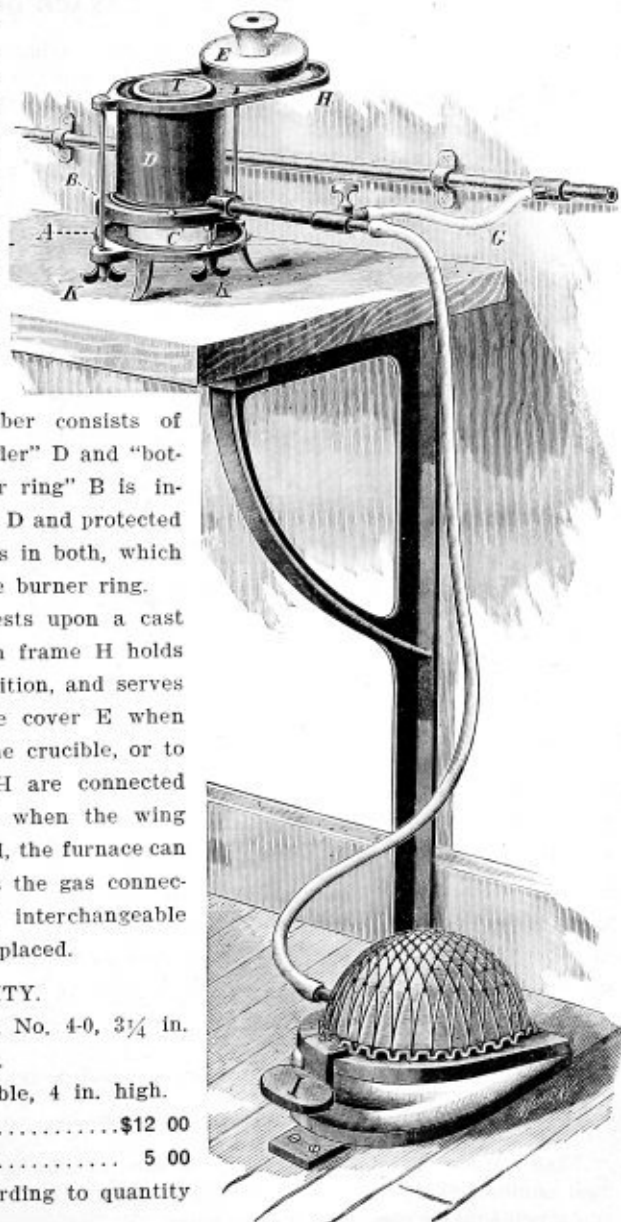
Black Lead Crucible, No. 4-0, $3\frac{1}{4}$ in. high.

Round Sand Crucible, 4 in. high.

Furnace only\$12 00

Foot Blower 5 00

Tubing extra, according to quantity needed.



GASOLINE CRUCIBLE FURNACE OUTFIT.



The fire clay casing holds the heat so perfectly that the most refractory substance can be fused with ease. The crucible will hold about ten ounces of gold. The power which can be obtained from the the blowpipe is far beyond what is required for most purposes, and is limited only by the fusibility of the crucible and casing. This blowpipe is detached from the furnace and can be used for brazing, tempering, annealing, fusing, soldering and all other work where heat is required. The capacity of the blowpipe is one quart of gasoline, and one filling is sufficient to heat the furnace at full blast for three hours.

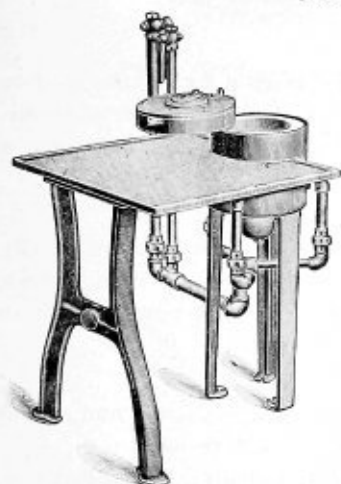
No. 104	Turner Gasoline Crucible Furnace Outfit, complete.....	\$14 00
	(Includes Blow Pipe, Crucible Furnace, Crucible and Tongs.)	
No. 4.D	Gasoline Blow Pipe, nickel plated finish.....	9 00
No. D-7	Crucible Furnace, complete, with Stand.....	5 50
No. D-71	Crucible Furnace, "No. 0," complete.....	3 50
No. D-711	Crucible Furnace, (Cover only).....	1 25
No. D-712	Crucible Furnace, (Body only).....	2 25
No. D-72	Stand complete for Crucible Furnace	2 00
No. D-74	Crucible, (size (00); 2 in. diam.; 2¼ in. high; capacity, ½ lb.)	50
No. 831	Bilyea Crucible Tongs	60

Height, over all, 12¾ inches Net weight, 8½ lbs.

When ordering use Catalog Numbers, as shown.

Note.—When writing your orders be sure to affix the page number to each item number. Viz: 1 only No. D4-272 or 3 only D711-272. This method saves you much time in checking your invoices.

MELTING FURNACES.



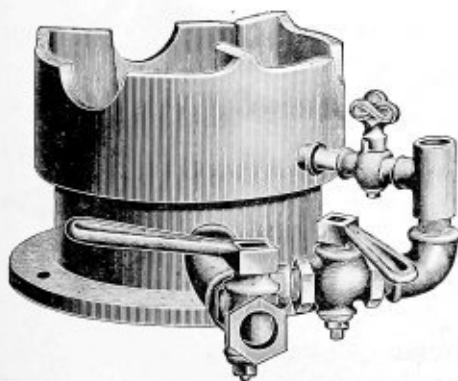
These furnaces are designed for melting gold, silver, brass, copper and all precious metals, for assay work, and all kinds of melting, where a crucible is required.

A perfect uniform heat is obtained by properly adjusting gas and air and we guarantee a great saving in time and crucibles by melting with gas.

Above cut shows furnace with table, which applies to Nos. 2, 3, and 4, but can be bought without table \$10 less regular price. No. 1 Melter is to set on bench only.

No.	Capacity	B. L. Pot	Gas Per Hour	Floor Space	Weight, Crated	Price
1	1 lb.	1	25 cub. ft.	6"x6"	25 lbs.	\$10 00
2	10 lb.	4	65 cub. ft.	10"x10"	100 lbs.	40 00
3	18 lb.	6	95 cub. ft.	11"x11"	160 lbs.	50 00
4	30 lb.	10	125 cub. ft.	12"x12"	250 lbs.	60 00
DIAMETER OF TABLE FOR ALL SIZES, 20"x20".						
5	45 lb.	15	130 cub. ft.	15"x15"	350 lbs.	80 00

BOILING OUT OR LADLE FURNACE.

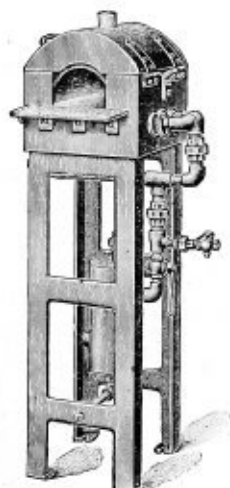


For boiling or pickling off soldered jewelry, boiling liquid that requires a good heat, melting soft metals as lead, tin, babbitt, etc. in a ladle, and for heating or boiling any kind of liquid in tanks or kettles, we recommend this style of furnace.

This furnace has proven its value among the leading manufacturing jewelers for the above work, and the cost of fuel is 40 per cent cheaper than any other method, when time is to be considered operating, together with the feature of doing away with dirt and dust of coal, charcoal, or other crude fuels.

Will heat any pot, kettle, tank, or ladle up to 10" in diameter.

MUFFLE AND ASSAY FURNACE.



This style of furnace is used for baking hard enameling in colors, on Jewelry, Silverware, etc., where the product of combustion must not come in contact with work.

Is also used for Assaying, Cupelling and Scorifying, and in this style of furnace, provision is made for air draught through muffle and vent-pipe to draw fumes to chimney, or open air.

All parts are replaced at a small cost and anyone can fit new muffles and parts in furnace.

Dimensions below apply to both styles of furnaces.

No.	Dim. of Muffle Inside	Floor Space	Gas, Per Hour	Weight, Crated	Price
0	2 $\frac{1}{8}$ x3 $\frac{1}{8}$ x6 $\frac{1}{2}$ "	9"x11"	35 cub. ft.	50 lbs.	\$15 00
1	4x6x12 $\frac{3}{4}$ "	15"x18"	75 cub. ft.	250 lbs.	45 00
2	3 $\frac{1}{4}$ x8 $\frac{1}{2}$ x13 $\frac{1}{4}$ "	20"x22"	125 cub. ft.	350 lbs.	70 00

No. 14. LADLE FURNACE.

With Fletcher's Solid Flame Heating Burner, for melting lead, tin, zinc, and their alloys.—This is a better ladle furnace in every respect than any other made. The burner is simple, safe, and works equally well with any gas supply available, giving proportionate speed of working. It can be removed from the casing and used for other purposes if desired. The worst possible accident to the burner can be remedied in a minute at the cost of a few cents. Capacity of burner, 35 ft. per hour. Gas supply pipe required, $\frac{3}{8}$ -inch. For illuminating gas, but will be altered to burn natural gas without advance in price. Always sent for illuminating gas unless natural gas or gasoline gas is specified.



No. 14.

PRICES:

No. 14. Ladle Furnace (Ladles extra)	\$3 50
With Cap-nut Regulator for Gasoline Gas.	3 80

OPTICIANS' SPECIAL FURNACE.



The recently improved method of making Bi-Focal Lenses has called for the production of a Muffle Furnace in which the temperature is positive and under perfect control of the operator, for the fusing of the segment to the lens.

THIS FURNACE DOES IT.

The peculiar character of the fire clay entering the construction of these furnaces, renders them positive, in annealing properties, disseminating the heat equally in all directions so that the lens is delivered from the Furnace properly annealed and free from fracture; a most important and necessary feature of the process.

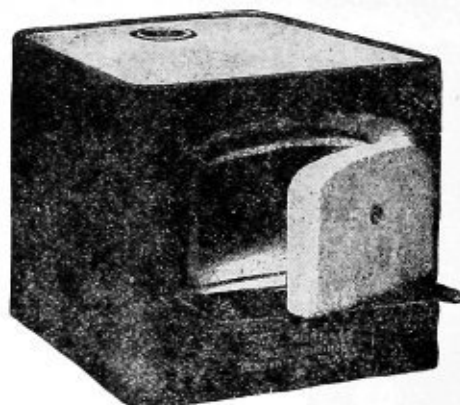
- No. 4 Opticians Special. Muffle space, $3\frac{7}{8}$ "x $5\frac{7}{8}$ "x3" high. Clay body, $7\frac{1}{2}$ "x $6\frac{1}{2}$ "x $5\frac{3}{4}$ " inside. Gas supply required, $\frac{3}{8}$ " clear way pipe and tap. Price with burner, six feet chimney pipe with damper and tongs\$20 00
- No. 5 Opticians Special. Muffle space, $4\frac{7}{8}$ "x $6\frac{5}{8}$ "x4" high. Clay body, $8\frac{3}{4}$ "x $7\frac{3}{4}$ "x $6\frac{3}{4}$ " inside. Gas supply required, $\frac{1}{2}$ " clear way pipe and tap. Price with burner, six feet chimney pipe with damper, and tongs 30 00
- No. 6 Opticians Special. Muffle space, 6 "x $8\frac{1}{2}$ "x $4\frac{7}{8}$ " high. Clay body, $10\frac{1}{4}$ "x $9\frac{1}{2}$ "x $8\frac{3}{4}$ " inside. Gas supply required, $\frac{1}{2}$ " clear way pipe and tap. Price with burner, six feet chimney pipe with damper, and tongs 37 00

Our new system of writing orders is most valuable to you, viz.:

1 only No. 5-273.

Meaning item No. 5 on page 273.

CASE GASOLENE MUFFLE FURNACES.



Patented.

Prospectors' Furnace No. 11....\$12.00

Size muffle 6x6½ in.; capacity four 10-gramme crucibles; net weight 39 lbs.; exterior dimensions width 10 in., height 10 in., length 9 in. Requires Hoskins burner or equivalent.

Case Muffle Furnace No. 12....\$15.00

Size muffle 6x10 in.; net weight 72 lbs. Requires Hoskins burner or equivalent.

Case Muffle Furnace No. 13....\$27.50

Size muffle 8x12 in.; net weight 115 lbs. Requires 1¾ in. Cary burner or equivalent.

Case Muffle Furnace No. 14....\$35.00

Size muffle 10x16 in.; capacity 12 20-grammes; net weight 190 lbs. Requires 2¼ in. Cary burner or equivalent.

Case Muffle Furnace No. 15....\$45.00

Size muffle 14x18 in.; capacity 20 20-grammes; net weight 285 lbs. Requires 2¼ in. Cary burner or equivalent.

These Furnaces are now being sold and used in every locality in the world.

The verdict is that they are by far the most economical and efficient furnaces made for gasolene.

The Case Gasolene Furnace is such that it works just as would a clean coke fire, giving an even temperature throughout, and, in the muffle furnace, heating the muffle close to the mouth. We would call attention to the high sides of the muffle, giving extra capacity.

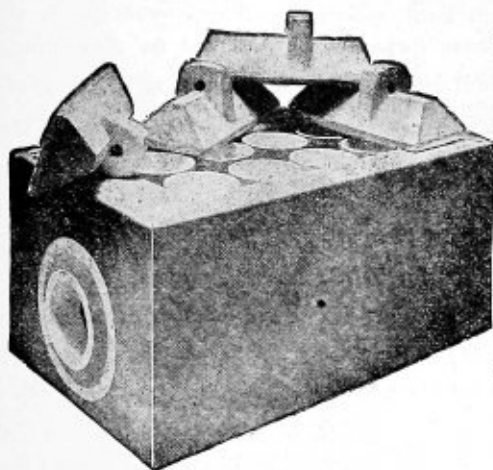
TO OPERATE "CASE" FURNACES it is necessary to have blow pipe tank and burner. We carry a full line of heavy pressed steel tanks, tinned inside and out to insure against rust, tested to a pressure of 300 pounds. They are fitted with a large substantial pump and supplied with 10 feet of ¼-inch pipe, elbow, etc., suitable to operate one to three burners at a time.

BURNERS		"Cary," Hydro-Carbon.				
		Dia.	1¼	1½	1¾	2 2¼ in.
		Each	\$10.00	11.00	12.00	13.50 15.00
		"Hoskins," Hydro-Carbon, each....\$6.00				

Order by respective number and be sure to affix page number, viz., 1 only No. 13—276.

Note.—See opposite page.

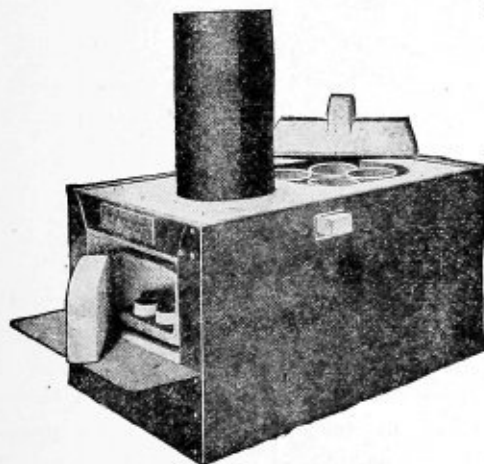
CASE GASOLENE FURNACES.
THESE FURNACES REQUIRE THREE LENGTHS STOVE-
PIPE OR EQUIVALENT DRAUGHT.



CASE CRUCIBLE FURNACES.

- No. 5\$15.00
Capacity 6 "J" crucibles; net weight 105 lbs. Requires 2-in. Cary burner or equivalent.
- No. 6\$15.00
Capacity 8 "F" or 20-gramme crucibles; net weight 72 lbs. Requires 1½-in. Cary burner or equivalent.
- No. 7\$18.00
Capacity 12 "F" or 20-gramme crucibles; net weight 110 lbs. Requires 2-in. Cary burner or equivalent.
- No. 8\$22.00
Capacity 16 "F" or 20-gramme crucibles; net weight 140 lbs. Requires 2¼-in. Cary burner or equivalent.

CASE COMBINATION FURNACES.



- No. 30\$18.00
Capacity 2 "G" or 20-gramme crucibles; size muffle 6x8 in.; net weight 90 lbs. Requires Hoskins burner or equivalent.
- No. 31\$25.00
Capacity 4 "G" or 20-gramme crucibles; size muffle 6x8 in.; net weight 110 lbs. Requires 1½-in. Cary burner or equivalent.
- No. 32\$27.50
Capacity 8 "F" or 20-gramme crucibles; size muffle 6x8 in.; net weight 125 lbs. Requires 2-in. Cary burner or equivalent.

STEEL TANKS.	{	2 Gal.	Price without burner.....	\$14
		4 Gal.	Price without burner.....	16
		8 Gal.	Price with gauge but without burner.....	20
		15 Gal.	Price with gauge but without burner.....	30

Note.—See opposite page. Our new system of writing orders is of great value to you. Please consider and use it.

OVEN FURNACES.



These furnaces are designed for Annealing, Case-Hardening or Hardening all classes of carbon steel Dies, Cutters, Drills, Reamers, Punches, Forming Tools, Etc., and for Pre-heating all classes of High Speed Steel Tools before they are treated in the high heat.

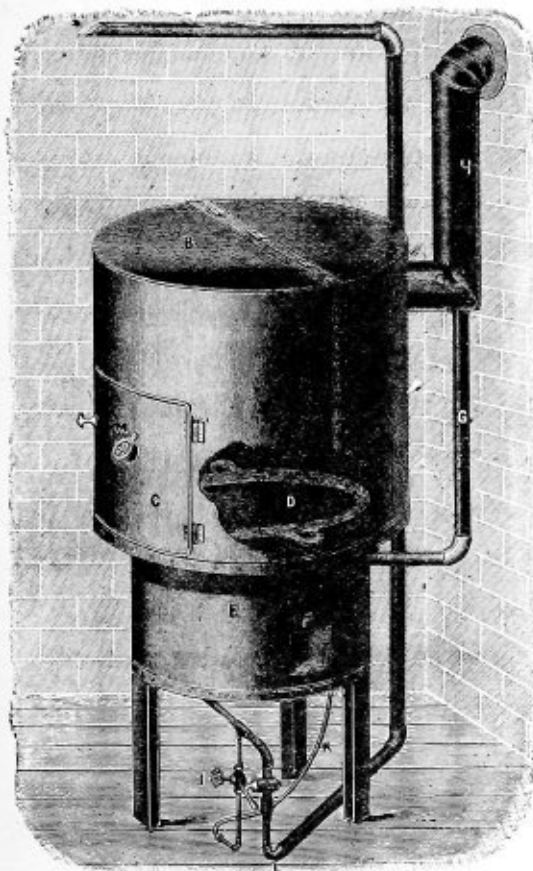
Extensively used for Annealing Metal work in pans or boxes, with no chance of overheating, as the direct flame does not come in contact with work.

	No. 1	No. 2
Heating Space	6 in. x 8 in.	10 in. x 11 in.
Entrance	4 in. x 6 in.	6 in. x 10 in.
Floor Space	14 in. x 14 in.	18 in. x 18 in.
Weight Net	200 lbs.	400 lbs.
Gas per hour.....	45 cubic ft.	75 cubic ft.
Air Pressure req.....	1 lb.	1 lb.
Price	\$40 00	\$55 00

	No. 3	No. 4
Heating Space	16 in. x 18 in.	11 in. x 18 in.
Entrance.....	6½ in. x 12 in.	6½ in. x 10 in.
Floor Space	30 in. x 36 in.	24 in. x 26 in.
Weight Net.....	1300 lbs.	800 lbs.
Gas per hour.....	150 cubic ft.	115 cubic ft.
Air Pressure req.....	1 lb.	1 lb.
Price	\$125 00	\$90 00

SWEEP REDUCING FURNACE.

For burning to ashes floor sweeps, filings, sink washings and polishings.
Preparing same for the refining melting furnace.



\$75 00

Such Furnaces are used for many operations where offensive fumes are to be drawn off as they arise from a Pot.

The iron caldron or pot D rests upon the top rim of the lining, a solid fire brick cylinder incased in E and is heated by a burner which distributes the heat evenly around the pot. The products of the combustion are injected into the stove pipe H by the pipe G and the smoke or fumes which arise from the pot are confined in the hood A and expelled through the pipe H which connects with the chimney. The door C gives access to the pot for changing it.

Gas consumption, about 60 cubic feet per hour.

To remove the pot or insert it, the front half of the hood hinged on top, is opened upwards. Connection with gas is by $\frac{3}{8}$ pipe K to the valve I. The air pipe must be brought down to or near the floor and connect with air pipe L by an upward turn, as shown in cut.



JEWELERS'

WIRE GAUGE.

No. 770. - - - Price, \$5.00.

Cut one-half size.

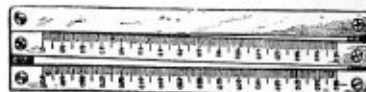
These Gauges are made with reference to the wants of Manufacturing Jewelers. One edge of the angular slot is graduated into 250 parts, and figured to give the size in thousandths of an inch. For example, a size of wire which passes down half-way into the slot, and stops opposite 125, is 125/1000 of an inch in diameter. The angular slot has no sharp edge to injure the stock gauged.

CHAIN MAKERS' GAUGES.



(Single.)

No.	Length.	Graduation.	Each.
1	8"	0 to 150	\$2 00
2	10	0 to 200	2 50



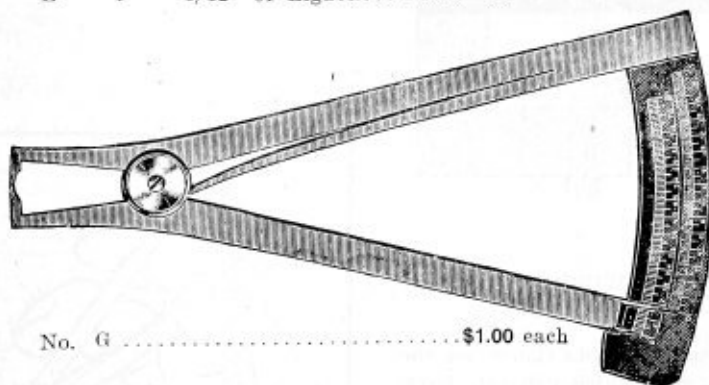
(Double.)

No. 3 is 10" long. Graduation from 0 to 300. Price, \$2 50 each.

DEGREE GAUGES.



No.	Length of Jaws	Graduations	Price Each
A	$\frac{3}{4}$ "	10ths of m. m.	\$0.50
B	$\frac{3}{4}$ "	12th of Lignes.	.50
C	1"	$\frac{1}{5}$ of m. m.	.75
D	1"	$\frac{1}{10}$ of m. m.	.75
E	1"	$\frac{1}{12}$ of Lignes.	.75

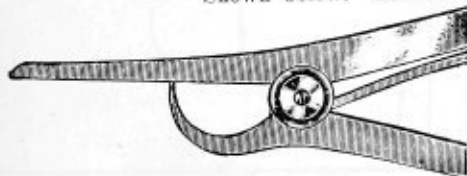


No. G\$1.00 each

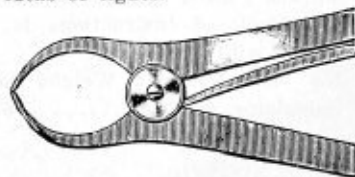
This gauge has a double index pointer which gives a reading for two measurements: 10ths of millimeters and 12ths of lignes.

DEGREE GAUGES FOR WATCH CASE MAKERS.

Shown below. Graduated in 12ths of lignes.

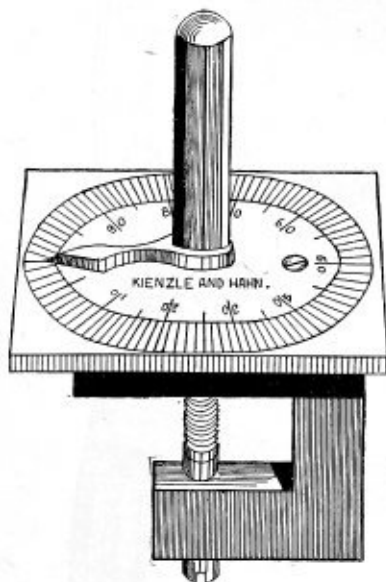


No. H\$1.00 each



No. J\$1.00 each

GAUGES.



DIAL GAUGE.

This Tool is too well known to need any description here.

No. A. Plain Gauge.....\$2 00 each

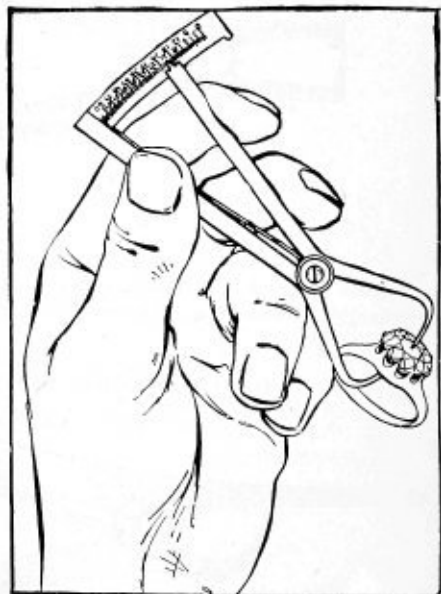
No. B. With Ratchet..... 2 50 each

DIAMOND WEIGHT GAUGE CALCULATOR.

The only reliable Gauge on the market with which you can determine the weight of a mounted diamond without removing stone from the mounting. The Gauge is used and highly recommended by best diamond merchants throughout the United States and Europe.

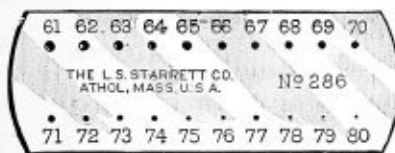
A Book of Instructions is furnished with each gauge.

No. "C" Diamond Weight Gauge Calculator, each\$3 75



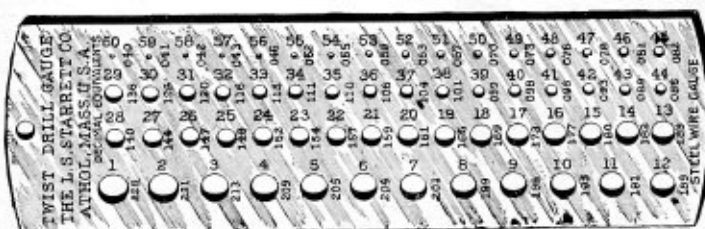
Always affix the page number to the item number, viz: 1 only No. "A"—282.

TWIST DRILL AND STEEL WIRE GAUGES.



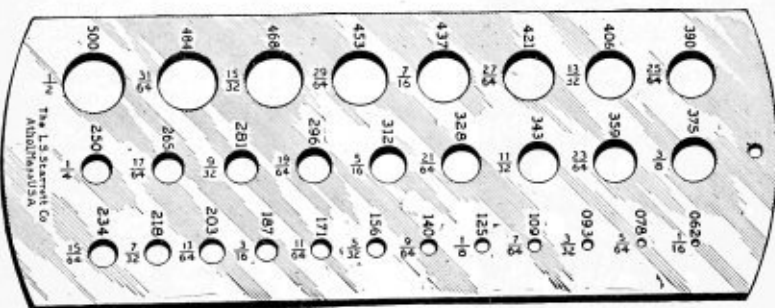
This Gauge gives the number of drill to fit each hole. It can also be used in measuring fine drill rods. Each gauge is tested after hardening. Size of gauge 2 inches long, $\frac{3}{4}$ inch wide and $\frac{1}{16}$ inch thick. It takes in sizes from 61 to 80 inclusive.

No. 286. (61 to 80) \$2 00



No. 186. (1 to 60) \$1 50

This Gauge gives the number of drill to fit each hole, and the size of the hole in thousandths of an inch.



No. 187. ($\frac{1}{16}$ to $\frac{1}{2}$, varying by 64ths) \$2 25

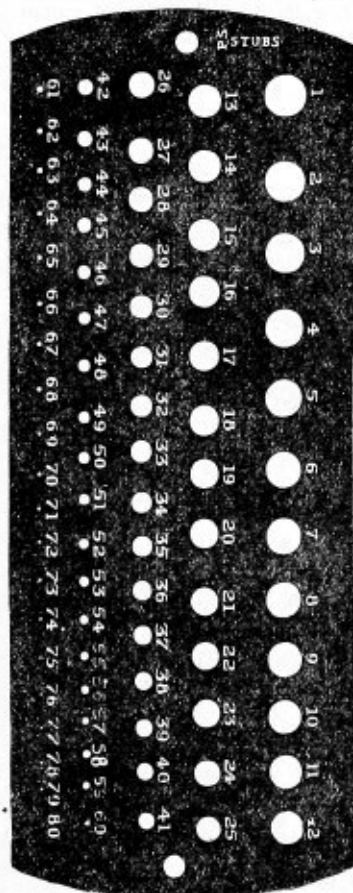
Each size is designated by both common and decimal fractions. The gauge is hardened and tempered and the holes standard.

Order by new system, viz.: 1 only No. 186-283.

GENUINE STUBS' STEEL WIRE GAUGE.

For the thousandths of an inch equivalents in the table and the remarks on Stubs' gauges we are indebted to Brown & Sharpe Mfg. Co., Providence, R. I.

TABLE OF EQUIVALENTS OF STUBS' STEEL WIRE GAUGE NUMBERS, IN THOUSANDTHS OF AN INCH AND HUNDREDTHS OF A MILLIMETER.



Gage	Inch	MM.	Gage	Inch	MM.
1	.227	5.76	41	.095	2.40
2	.219	5.56	42	.092	2.33
3	.212	5.38	43	.088	2.23
4	.207	5.25	44	.085	2.15
5	.204	5.18	45	.081	2.05
6	.201	5.10	46	.079	2.01
7	.199	5.05	47	.077	1.97
8	.197	5.01	48	.075	1.92
9	.194	4.94	49	.072	1.84
10	.191	4.86	50	.069	1.76
11	.188	4.79	51	.066	1.68
12	.185	4.71	52	.063	1.61
13	.182	4.64	53	.058	1.48
14	.180	4.58	54	.055	1.40
15	.178	4.53	55	.050	1.28
16	.175	4.46	56	.045	1.15
17	.172	4.38	57	.042	1.07
18	.168	4.28	58	.041	1.05
19	.164	4.18	59	.040	1.03
20	.161	4.10	60	.039	0.99
21	.157	4.01	61	.038	0.97
22	.155	3.94	62	.037	0.94
23	.153	3.89	63	.036	0.92
24	.151	3.84	64	.035	0.89
25	.148	3.76	65	.033	0.84
26	.146	3.71	66	.032	0.81
27	.143	3.64	67	.031	0.79
28	.139	3.53	68	.030	0.76
29	.134	3.41	69	.029	0.74
30	.127	3.23	70	.027	0.69
31	.120	3.05	71	.026	0.66
32	.115	2.90	72	.024	0.61
33	.112	2.83	73	.023	0.59
34	.110	2.78	74	.022	0.56
35	.108	2.73	75	.020	0.51
36	.106	2.68	76	.018	0.46
37	.103	2.61	77	.016	0.41
38	.101	2.56	78	.015	0.38
39	.099	2.51	79	.014	0.36
40	.097	2.45	80	.013	0.33

The Stubs' Steel Wire Gauge is the one that is used in measuring drawn steel wire or drill rods of Stubs' make and is also used by many makers of American drill rods.

No. "A" Genuine Stubs' Gauge.....\$1 40 each

No. "B" American Drill Rod Gauge.....1 25 each

Note.—American and Stubs' Sizes differ.

TIME SAVER DRILL, TAP, AND STEEL WIRE GAUGE.

No. 185

TIME O SAVER DRILL & TAP DRILL GAUGE CHART FOR MACHINE SCREW TAPS THE L. S. STARRETT CO. ATHOL, MASS. U. S. A.			
SIZE OF TAP	DRILL	BODY DRILL	DECIMAL EQUIVALENTS
14X20 10 $\frac{1}{4}$	218	130	135 040
14X24 6 $\frac{1}{4}$	221	144	128 041
12X24 15 1	221	144	128 041
11X24 19 3	221	144	128 041
10X24 23 9	221	144	128 041
10X32 20 9	221	144	128 041
9X32 24 13	221	144	128 041
8X32 28 18	221	144	128 041
7X32 30 22	221	144	128 041
6X32 33 27	221	144	128 041
5X40 36 29	221	144	128 041
4X36 41 31	221	144	128 041
3X48 44 37	221	144	128 041
2X56 48 42	221	144	128 041
STEEL WIRE GAUGE			

By the use of this gauge one is enabled to select at once the right sized drill to suit machine screw tap most commonly used, leaving just stock enough for the tap to cut as near a full thread as is practicable for one tap without breaking it, thus saving much time and uncertainty of result attending the former crude ways of making a selection.

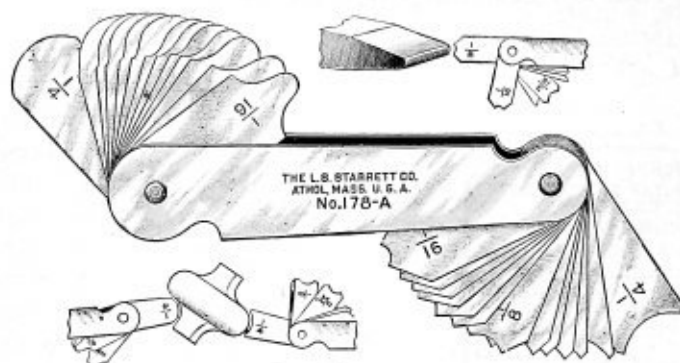
Explaining the chart, the first row of figures, for an example, read thus, 14x20 10 $\frac{1}{4}$. The number 14 (in the first row of figures) means the number or size of tap; 20 the pitch or size of thread; 10 the size of drill to use which will leave the right stock for proper thread; and $\frac{1}{4}$, size of drill to use to let this tap or screw through outside of the thread.

The figures—1, etc., up to 60—designate the number of drill (size agreeing with the holes). Other figures, 228, 221, etc., designate the size of hole in thousandths of an inch.

Price\$1 75

Do not overlook new system of writing orders. It's a great help to us in filling orders, also a great benefit to you in checking your invoices, because you will have the page number on which to find the item.

FILLET OR RADIUS GAUGE No. 178.



This Gauge is also referred to as a Concave and Convex Gauge and is especially adapted for use in laying out special forming tools, dies, etc., as well as for measuring fillets. The illustrations show a few of the ways in which the Gauge can be used.

We recommend it for the use of machinists and tool makers as well as pattern makers.

Size A has 26 leaves stamped to indicate radii by 64ths, from $\frac{1}{16}$ in. to $\frac{1}{4}$ in. (one-half diametric size). Diameters are from $\frac{1}{8}$ in to $\frac{1}{2}$ in., varying by 32nds.

Size B is made with 32 leaves stamped to indicate radii by 64ths, from 17-64 in. to $\frac{1}{2}$ in. Diameters are from $\frac{1}{2}$ in. to 1 in., varying by 32nds.

PRICES:

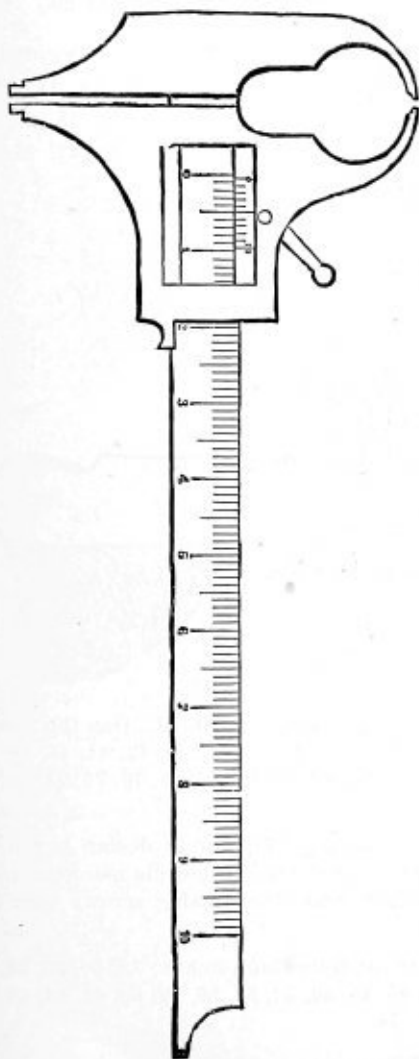
No. 178—A	Each, \$1 00
No. 178—B	Each, 1 50

Make your order read, viz.:

1 only No. 178A—286.

The first number tells you the item number. The second number the page on which the item is listed.

MILLIMETER GAUGE.



No. A Dozen\$15 00



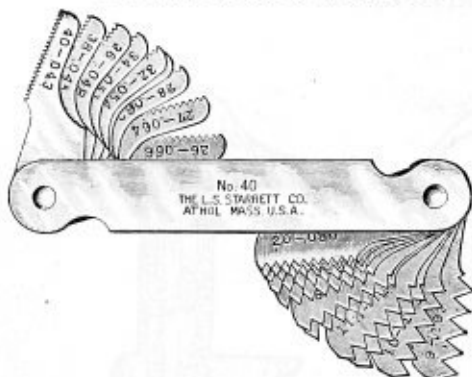
No. B Boxwood, Dozen.....\$ 3 00

No. C Brass, Dozen..... 7 80

No. D German Silver..... 10 20

IMPROVED SCREW PITCH GAUGES.

Used inside a nut as well as on the outside of a screw or bolt.



No. 40 \$1 00

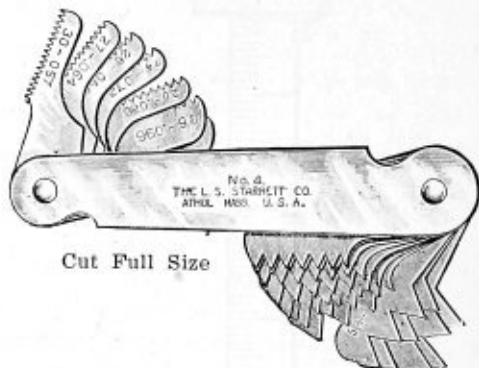
The gauge has twenty-two pitches, viz.: 9, 10, 11, 11½, 12, 13, 14, 15, 16, 18, 20, 22, 24, 26, 27, 28, 30, 32, 34, 36, 38, 40.

No. 4 \$1 25

24 Pitches, 4 to 30

Has the following pitches:

4, 4½, 5, 5½, 6, 7, 8, 9, 10, 11, 11½, 12, 13, 14, 15, 16, 18, 20, 22, 24, 26, 27, 28, 30.



Cut Full Size

No. 5 26 Pitches, 32 to 82,
\$1 25

Of the same form as No. 40. Has the following pitches: 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 76, 78, 80, 82.

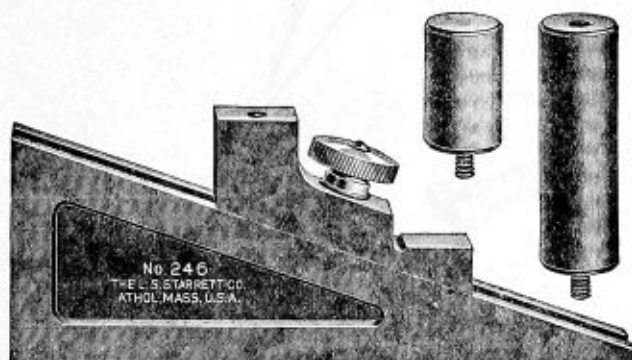
No. 157 \$1 00

Has 22 pitches. Similar in design to No. 40. It is made for the use of bicycle manufacturers, electricians, and others using screws with fine V threads.

It has the following pitches: 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74.

Always affix page number to the item number. By so doing, error will be avoided.

PLANER AND SHAPER GAUGE. No. 246.



This Gauge is made of steel, drop forged, and designed with a view to getting different heights on a planer.

The Gauge will measure from one-half to $5\frac{1}{2}$ inches. It will also be found very convenient on other tools such as milling machines where slots are being milled, etc. The Gauge can be inserted in the slot and by sliding the block on the wedge a perfect fit is given. Then the tool may be taken out and exact measurement obtained by use of a micrometer. When a certain close measurement is desired the tool can be first set by the micrometer and used as a standard gauge. The Gauge is case-hardened and nicely finished and will be found a most useful tool for planer and milling machine work.

No. 246 Price, each.....\$5 00

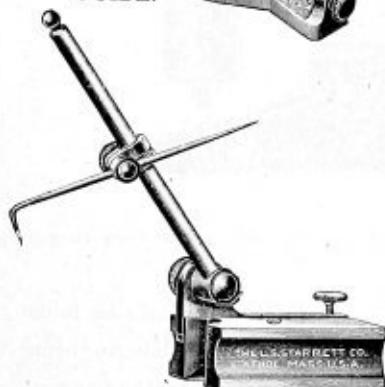
Simply write your order thus:

1 only No. 246-289.

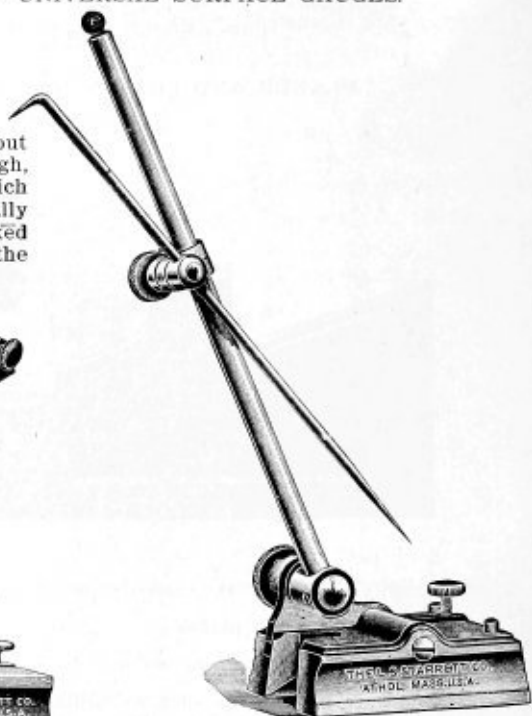
TOOL MAKERS' UNIVERSAL SURFACE GAUGES.

The No. 56 Gauge weighs but ten ounces, is five inches high, and, folding the spindle (which is four inches long) horizontally over the base, it may be packed in $1\frac{3}{8} \times 1\frac{1}{2} \times 4$ inches space in the tool chest.

AUXILIARY GUIDE.



(No. 56)



(No. 57)

No. 56 A	With 4 inch spindle and auxiliary guide.....	\$3 00
No. 56 B	Without auxiliary guide.....	2 50

Sent with guide unless otherwise ordered.

A 7 inch spindle is furnished when ordered at an extra cost of 25 cents.

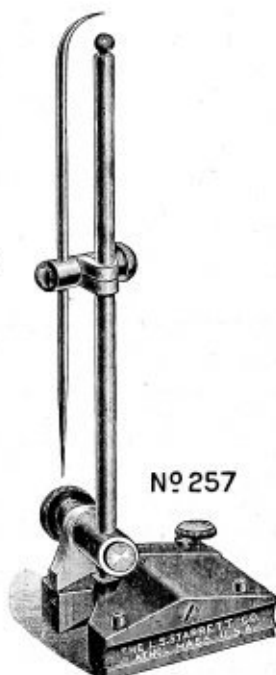
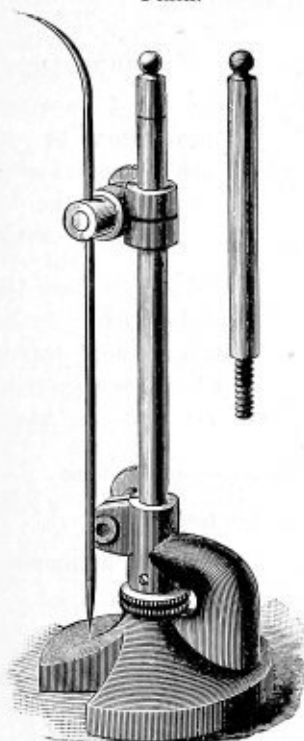
This gauge is admirably adapted for light work. The base is steel, nicely finished and case-hardened, with depressions in the sides for the thumb and finger to grasp.

No. 57 A	3 inch base with 9 inch spindle	\$2 50
No. 57 B	3 inch base with 9 and 12 inch spindles	2 85
No. 57 C	$3\frac{3}{4}$ inch base with 12 inch spindle	3 00
No. 57 D	$3\frac{3}{4}$ inch base with 12 and 18 inch spindles	3 50

This gauge has heavy base, grooved through the bottom and end, adapting it for use on or against circular work as well as flat surfaces.

Always affix page number to every item number of goods ordered.

STARRETT'S SURFACE GAUGES.

No. 52
Plain.No. 53
Micrometer.No. 257
New Universal.

No. 52 A	8 inch	.....\$2 00
No. 52 B	12 inch	..... 2 75
No. 52 C	12 inch, with 6-in. extension	.....3 25

For fine adjustment, the spindle in the base is raised or lowered by a knurled nut, and all backlash is taken up by a spiral spring in the base.

	Inches	
No. 53 A	8	without extension..\$2 50
No. 53 B	12	without extension.. 3 50
No. 53 C	12	with 6-in. extension 4 00

This gauge has a turned and polished base, a micrometer adjusting nut reading 1,000ths, and a six-inch extension for the spindle.

No. 257 A	3	inch base, with 9 inch spindle	.....\$3 00
No. 257 B	3	inch base, with 9 and 12 inch spindles	3 35
No. 257 C	3 1/2	inch base, with 12 inch spindle	.... 3 50
No. 257 D	3 1/2	inch base, with 12 and 18 inch spindles	4 00

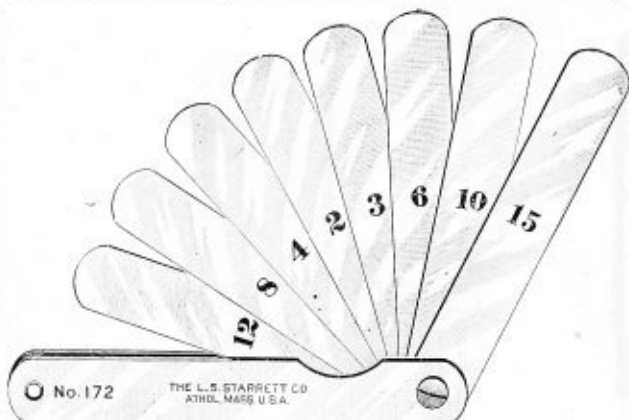
These gauges have a Case-hardened Steel Base.

The No. 257 Gauge reaches almost every imaginable position for service.

Every item number in this catalog—when coupled with its page number positively avoids error.

THICKNESS GAUGE OR "FEELER."

This gauge has 8 leaves, viz.: .002, .003, .004, .006, .008, .010, .012, .015. The leaves are tempered, and have the thickness marked upon them.



PRICES:

No. 172 A Case 3 $\frac{3}{4}$ inches long by $\frac{1}{2}$ inch wide; leaves 3 $\frac{1}{16}$ inches long by $\frac{1}{2}$ inch wide..\$1 00

No. 172 B Case 4 $\frac{1}{4}$ inches long by $\frac{1}{2}$ inch wide; leaves 4 $\frac{1}{2}$ inches long by $\frac{1}{2}$ inch wide\$1 50

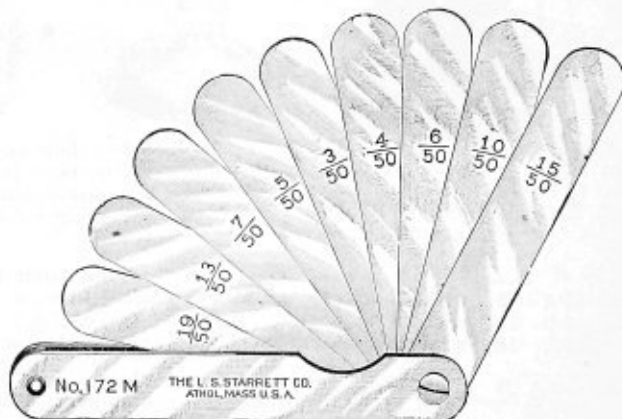
No. 172 C Case 6 $\frac{1}{4}$ inches long by $\frac{1}{2}$ inch wide; leaves 6 inches long by $\frac{1}{2}$ inch wide..... 2 00
Size A will be sent unless otherwise ordered.

This gauge has nine leaves, tempered and marked in 50ths of a millimeter, as follows, 3-50, 4-50, 5-50, 6-50, 7-50, 10-50, 13-50, 15-50 and 19-50.

PRICES:

No. 172 M A Case 8 cm. long by 8 mm. wide, leaves 7 cm. long by 8 mm. wide,
\$1 00

No. 172 M B Case 12 cm. long by 8 mm. wide; leaves 11 cm. long by 8 mm. wide \$1 50

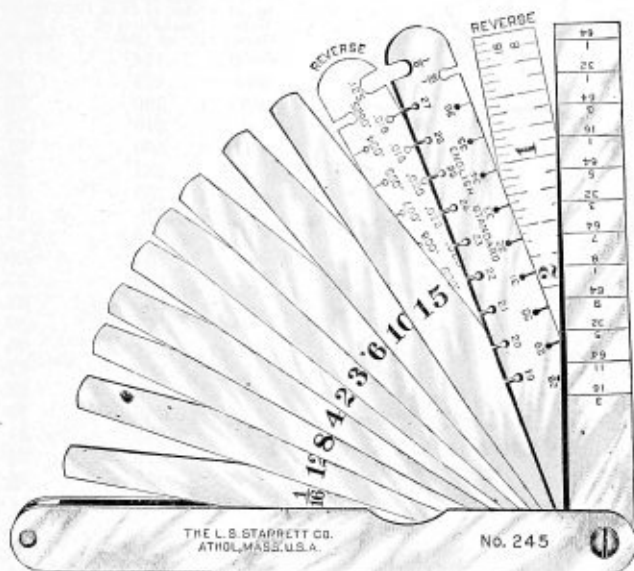


No. 172 M C Case 16 cm. long by 8 mm. wide; leaves 15 cm. long by 8 mm. wide\$2 00
Size A will be sent unless otherwise ordered.

Order by our new system, it will save you much valuable time.

ENGINEER'S TAPER, WIRE AND THICKNESS GAUGE.

No. 245.



This gauge is especially designed for the use of marine engineers, machinists and others desiring a set of gauges in compact form.

The taper gauge shows the thickness in 64ths to $\frac{1}{16}$ ths of an inch on one side, and on the reverse side is graduated as a rule three inches of its length, reading in 8ths and 16ths of an inch.

The wire gauge, English Standard, shows on one side sizes numbered from 19 to 36, with two extra slots, one $\frac{1}{16}$, the other $\frac{1}{8}$ of an inch, and on the reverse side shows the decimal equivalents expressed in thousandths. This gauge has also 9 thicknesses or feeler gauge leaves, approximately 4 inches long, of the following thicknesses: .002, .003, .004, .006, .008, .010, .012, .015 and $\frac{1}{16}$ th of an inch, all folded within the case, which is $4\frac{3}{4}$ inches long convenient to handle or to carry in the pocket.

No. 245 Price, each\$3 50

Always affix the page number to the item number, viz.: 1 only No. 245-293. this system is a wonderful help in checking invoices.

ENGLISH STANDARD WIRE GAUGES.

Each Gauge Tested After Hardening.



No. 188 takes in No. 1 to 36. \$2 00

No. 189 takes in No. 6 to 36. 1 50

No. of Wire Gauge	Size of Each No. in Decimal Parts of an Inch	No. of Wire Gauge	Size of Each No. in Decimal Parts of an Inch
0000	.454	17	.058
000	.425	18	.049
00	.380	19	.042
0	.340	20	.035
1	.300	21	.032
2	.284	22	.028
3	.259	23	.025
4	.238	24	.022
5	.220	25	.020
6	.203	26	.018
7	.180	27	.016
8	.165	28	.014
9	.148	29	.013
10	.134	30	.012
11	.120	31	.010
12	.109	32	.009
13	.095	33	.008
14	.082	34	.007
15	.072	35	.005
16	.065	36	.004

MUSIC WIRE GAUGE.

Each Gauge Carefully Tested After Hardening.

Size No.	Size of each No. in decimal parts of an inch	Size No.	Size of each No. in decimal parts of an inch
8-0	.0083	12	.0296
7-0	.0087	13	.0314
6-0	.0095	14	.0326
5-0	.010	15	.0345
4-0	.011	16	.036
3-0	.012	17	.0377
2-0	.0133	18	.0395
1-0	.0144	19	.0414
1	.0156	20	.0434
2	.0166	21	.046
3	.0178	22	.0483
4	.0188	23	.051
5	.0202	24	.055
6	.0215	25	.0586
7	.023	26	.0626
8	.0243	27	.0658
9	.0256	28	.072
10	.027	29	.076
11	.0284	30	.080



Cut Full Size.

Washburn & Moen standard.

No. 280 takes in No. 12 to No. 28. \$1 50

Do not forget to affix the page number to each respective item number. It saves time.

AMERICAN STANDARD WIRE GAUGES.

Each gauge is tested After Hardening and Warranted Accurate.



No. 281 takes in No. 0 to No. 36.

\$2 50

No. 282 takes in No. 5 to No. 36.

\$2 00



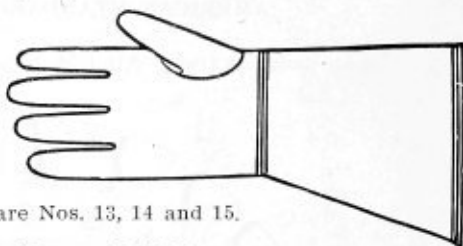
Note—The No. 282 gauge is furnished with the decimal equivalents stamped on the back opposite each hole.

RUBBER GLOVES AND FINGER COTS.

Note—Always Specify Size Wanted.

ACID GLOVES—"GAUNTLET."

No.		Dozen Pairs
A	9" Black	\$39 00
B	9" White	39 00
C	5" White	33 00



Stock sizes are Nos. 13, 14 and 15.

Note.—For sizes larger than No. 15 we add \$6.00 to list. For Fingers and Thumbs Reinforced, we add \$4.50 to list. For Fingers, Thumbs also Palms Reinforced, we add \$6.00 to list.

PURE GUM GLOVES. For Dissecting and Other Purposes.

No. "D"	Ladies' Short Light Weight	Per doz. pairs, \$24 00
No. "E"	Ladies' Gauntlet, Light Weight	Per doz. pairs, 27 00
No. "G"	Men's Short, Light Weight	Per doz. pairs, 27 00
No. "H"	Men's Gauntlet, Light Weight	Per doz. pairs, 30 00

SEAMLESS PURE GUM GLOVES. Extra Light Weight.

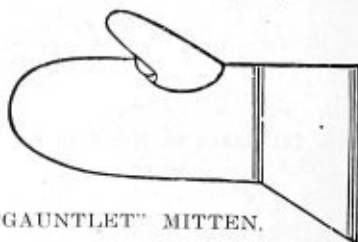
No. "J"	Sizes, Nos. 7 to 10	Per doz. pairs, \$12 00
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SEAMLESS RUBBER GLOVES. Heavy Weight.

No. "K"	Black, sizes Nos. 7 to 10	Per doz. pairs, \$15 00
No. "L"	Maroon, sizes Nos. 7 to 10	Per doz. pairs, 15 00
No. "M"	White, sizes Nos. 7 to 10	Per doz. pairs, 15 00

**"SHORT" MITTEN.**

	Per doz. pairs.
"R" No. 1 Light	\$16 50
"S" No. 1 Light, Wool-lined	22 50
"T" Heavy	19 50
"U" Motormen's Short	25 00
"V" Motormen's Short, Wool lined	31 00
"W" Extra Heavy	22 50
"X" Pure Gum	40 00
"Y" Acid	33 00

**"GAUNTLET" MITTEN.**

No.	Per doz. pairs.
1	Gauntlet Heavy \$25 00
2	Gauntlet Extra Heavy 28 50
3	5-in. Gauntlet Acid 36 00
4	9-in. Gauntlet Acid 39 00
5	Gauntlet Light 22 50
6	Gauntlet, Wool-lined 28 50

FINGER COTS.

	Per Gross		Per Gross
No. 7 Small	\$4 00	No. 10 Small	\$3 00
No. 8 Medium	4 00	No. 11 Medium	3 00
No. 9 Large	4 00	No. 12 Large	3 00

LE PAGE'S LIQUID GLUE.

Always Ready for Use.

IN PATENT TIN CANS.



No.	Price
A 1/2 Gill Cans, per doz.....	\$1 65
B Gill Cans, per doz.....	2 20



No.	Price
C 1/2 Pint Cans, per doz.....	\$3 25
D Pint Cans, per doz.....	5 40
E Quart Cans, per doz.....	9 50
G 1/2 Gallon Cans, per doz...	18 50
H Gallon Cans, per doz.....	36 00
J 5 Gallon Cans, boxed, per Gallon	2 80

LePage's Glue Cans have a patent top which requires only a quarter turn to secure the contents from evaporating or leaking, which is a great advantage to mechanics, who cannot always have the cans right side up in their repairing kits.

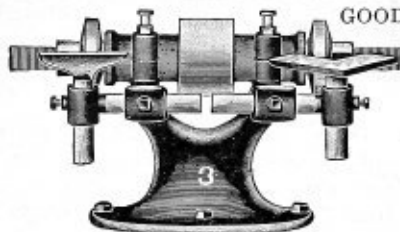
PHOTO-ENGRAVER'S GLUE.



No.	Price
K Pint Bottles, per doz.....	\$12 00
L Quart Bottles, per doz...	20 00

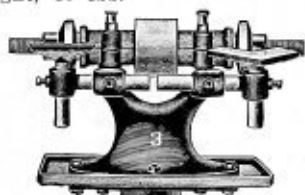
Always order by respective number and do not fail to affix page number, viz.: Ship 1/2 Doz. "D"-297.

GOOD, LOW PRICED GRINDERS.



No. 3. \$15 00

Swings two Emery Wheels 10 inches diameter by 2 inches thick. To center of spindle, $7\frac{1}{2}$ inches. Length of spindle, $18\frac{1}{4}$ inches. Size of base, $10\frac{1}{8} \times 6\frac{1}{4}$ inches. Weight, 40 lbs.

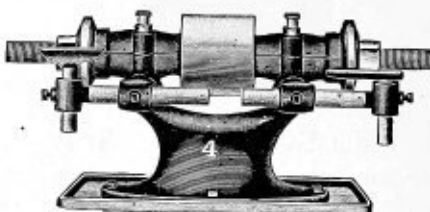


No. 30. FLOOR GRINDER. \$26 00
Has a No. 3 Head fitted onto the column.

From floor to head, 32 inches. To center of spindle, $39\frac{1}{2}$ inches. Size of base of stand, $14\frac{1}{2} \times 16\frac{1}{2}$ inches. Weight, 110 lbs.

No. 4. HEAD. \$20 00

Same as shown on Pedestal. Will swing two Emery Wheels 12 inches diameter by $2\frac{1}{2}$ inches thick. To center of spindle, $8\frac{1}{2}$ inches. Length of spindle, $26\frac{1}{2}$ inches. Size of base, $11\frac{1}{8} \times 8$ inches. Weight, 75 lbs.



No. 40. FLOOR GRINDER. \$35 00
Has a No. 4 Head fitted onto the column.

From floor to head, 32 inches. To center of spindle $40\frac{1}{2}$ inches. Size of base of stand, 15×19 inches. Weight, 165 lbs.

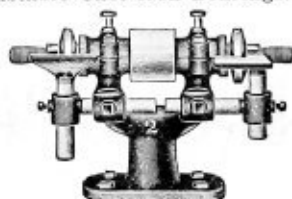
GOOD LOW PRICED GRINDERS.

Equipped With Dust-proof Oil Cups and Adjustable Cast Iron Bearings.



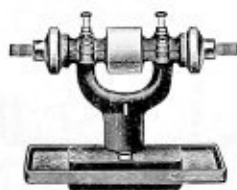
No. 1. \$5 00

Will swing two Emery Wheels.
6-inch diameter by 1 inch thick.
To center of spindle, 5 inches.
Length of spindle, $10\frac{3}{4}$ inches.
Size of base, $4\frac{1}{4} \times 5\frac{1}{4}$.
Weight, 9 lbs.



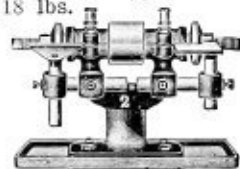
No. 2. \$10 00

Will swing two Emery Wheels.
8-inch diameter by $1\frac{1}{2}$ inches thick.
Height to center of spindle, 6 inches.
Length of spindle, $13\frac{1}{2}$ inches.
Size of base, $5\frac{3}{8} \times 6\frac{3}{8}$ inches.
Weight, 18 lbs.



No. 10.
FLOOR
GRINDER.
\$15 00

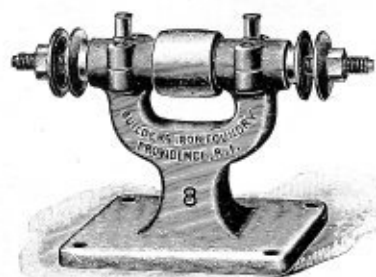
Has a No. 1 Head fitted onto the column.
From floor to head, 33 inches.
To center of spindle, 38 inches.
Size of base, 5×6 inches.
Weight, 49 lbs.



No. 20.
FLOOR
GRINDER.
\$17 50

Has a No. 2 Head fitted onto the column.
From floor to head, 33 inches.
To center of spindle, 39 inches.
Size of base of stand, $13\frac{1}{2} \times 14\frac{1}{2}$ inches. Weight, 73 lbs.

GRINDER HEADS.



No. 1.

This machine takes two grinding wheels 8-inch diameter, 1-inch face, and $\frac{1}{2}$ -inch hole.

Head, Column and Countershaft

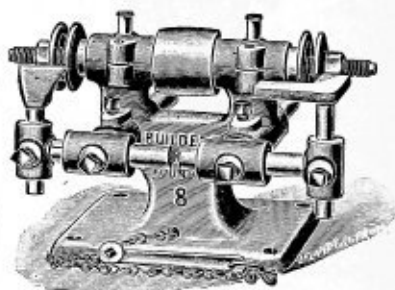
(complete)	\$21 00
Head only	5 00
Column only	8 50
Countershaft only	7 50

No. 2.

This machine takes two grinding wheels 8-inch diameter, 1-inch face, $\frac{1}{2}$ -inch hole.

Head, Column and Countershaft

(complete)	\$25 00
Head only	9 00
Column only	8 50
Countershaft only	7 50

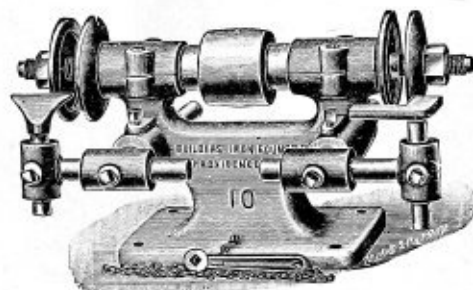


No. 3.

This machine takes two grinding wheels 10-inch diameter, $1\frac{1}{2}$ -inch face, and $\frac{3}{4}$ -inch hole.

Head, Column and Coun-

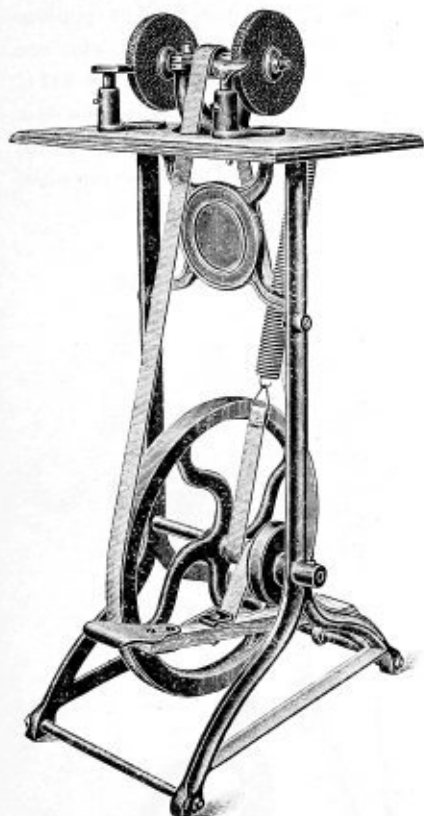
tershaft (complete) ..	\$31 00
Head only	11 50
Column only	10 00
Countershaft only	9 50



Simply write your orders thus: 1 only No. 2—300. You will then be sure to get the right article.

FOOT-POWER GRINDERS.

These Machines Will Give a Speed of 2000 Revolutions per Minute.



(No. 2)

This machine will carry two wheels 7-inch diameter by 1-inch face.

PRICE, WITHOUT EMERY
WHEELS:

Machine complete with Head \$20 00
Machine without Head..... 14 00
Head and Rests only..... 8 00



(No. 6)

This machine will carry a wheel 6-inch diameter by 1-inch face.

Price, \$7 00

Note—Order by our new system—After every item number be sure to specify the page number.

FOOT-POWER "GRINDSTONE" MACHINE.



No. 2.

This Grindstone is very popular with jewelers and others who use small tools. The stones are $8 \times 1\frac{3}{4}$ inches. They come from the Huron quarries, and are correct grain for work which they are intended for. Weight, boxed, 66 lbs.

Price, each, \$4 00

No. 3.

This machine, No. 3, has a stone $14 \times 1\frac{3}{4}$ inches. The increased size and weight give it greater speed and capacity. The stone is operated by a wooden pitman, which will prove durable and satisfactory.

It weighs, boxed, 85 lbs.



Price, each, \$4 50



GRINDSTONE No. 4

The main difference between this Grindstone and our No. 3, is in the shape of the stand, No. 4 having four legs, as shown in the illustration, instead of three. The advantage we claim over previous pattern is stability. The arbor on which the stone is hung is made from steel.

When desired we can furnish for power attachment a 4x2-inch pulley. The pulley is represented in above cut. Size of stone 14x1¼ inches.

Price, without pulley.....\$5 00

Price of pulley 50

The latter will not be sent unless specified on orders.

Packed one in a case.

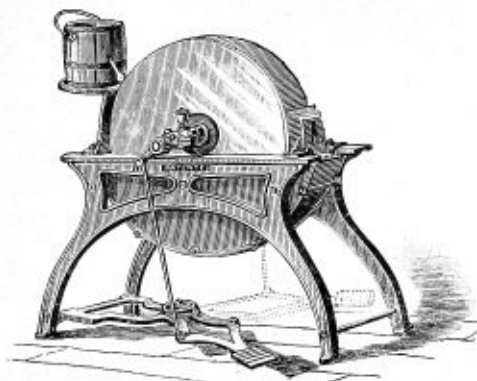
Gross weight 91 lbs.

GRINDSTONE TRUING DEVICE.

It is made in three sizes, is adjustable to any size frame and may be applied to Iron Frame Power Grindstone or any other iron grindstone frame. The threaded cutter runs in hardened steel bearings—supplied with Patent Lubricating Device—is of hardened steel, and can be recut many times. The cutter is brought into contact with the stone by turning the wheel on the back of the device, and can be made rigid by means of two set screws.

	Length of Roll.	Diam. of Roll.	Length Over All	Price	Extra Roll
No. 1	5½ inches	1½ inches	13 inches	\$15 00	\$ 5 00
No. 2	8½ inches	2 inches	18 inches	18 50	6 00
No. 3	12½ inches	3¼ inches	24 inches	36 00	11 00

PATENT IRON GRINDSTONE FRAMES.

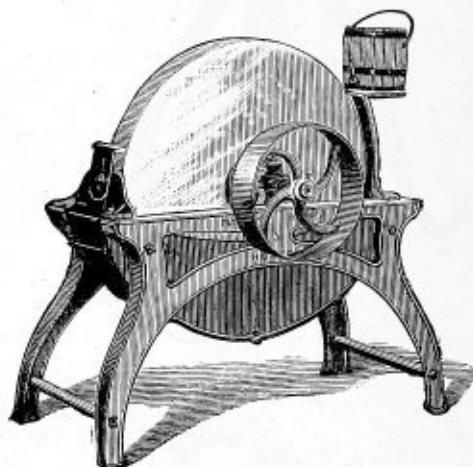


The Foot-power Frame has Swivel Treadle for right or left foot.

When ordering tell us exactly what to send.

These Frames are Strong, Durable and Neat. Journal Boxes have covered Oilers. EXTRA HEAVY STEEL ARBORS, FLANGES and NUTS. Babbitt bearings.

When ordering tell us exactly what to send.



Number	00	0	1	2	3	4	5
Power Applied By	Treadle or Pulley	Treadle and Pulley	Pulley Only	Pulley Only	Pulley Only	Pulley Only	Pulley Extra
Without Stone	\$12 00	\$13 50	\$13 00	\$18 50	\$22 00	\$35 00	\$65 00
With Stone	14 00	15 50	15 00	22 00	26 00	40 00	
Size of Stone	.24x2½	24x2½	24x3	27x3½	30x4	36x5	48x8
Shield, Pan and Bucket	\$1 00	\$1 00	\$1 00	\$2 00	\$2 00	\$2 00	\$3 00
Hand Crank	0 50	0 50	0 50	0 75	0 75	1 00	

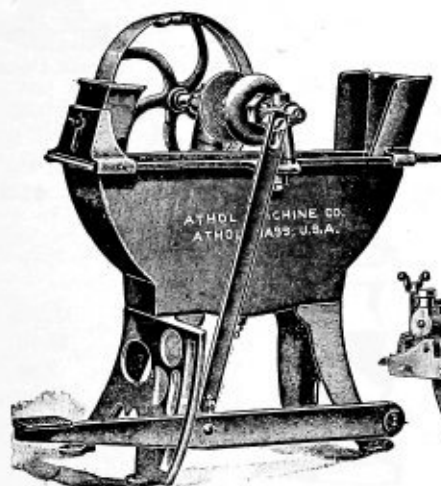
(The size of Stones unavoidably approximate).

Be sure to affix page number to every item number ordered.

IRON GRINDSTONE FRAMES.

No. 156

With water guard and adjustable tool rest.



Takes stone 30 inches in diameter and 4 inch face. Boxes Babbitt lined. Weight ready for shipment, 170 pounds.

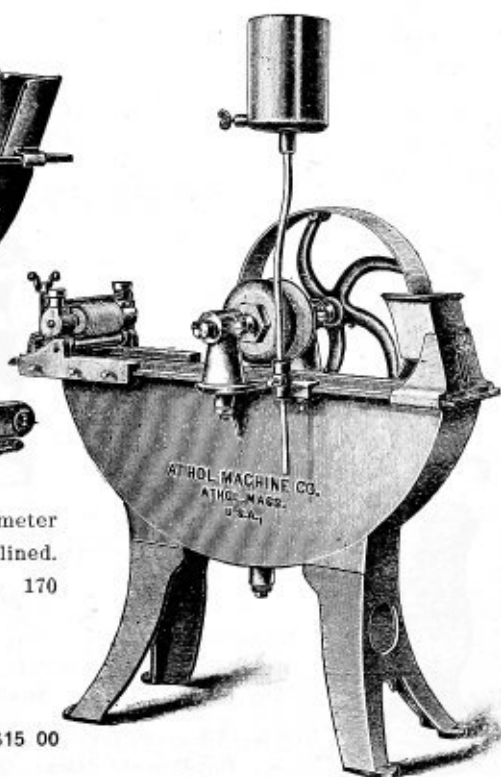
PRICE:

Frame as illustrated.....	\$15 00
Without pulley or treadle attachment	12 00
Pulley	1 50
Treadle	1 50

Pulley has removable handle attached as shown in cut. Price with stone quoted on request.

No. 157

With adjustable tool rest, truing attachment, and waterpot.



Takes stone 30 inches in diameter and 4 inch face. Boxes Babbitt lined. Weight ready for shipment, 200 pounds.

Price complete, as illustrated..\$18 00
Without waterpot

17 00

Price with stone quoted on request.

CHASING HAMMERS.

All weights and dimensions are approximate.



Ball Peen.

The two adjoining illustrations represent the Genuine French "Chasing" Hammers. They are made of the Best Quality of Steel.



Cross Peen.

Numbers	A	B	C	D	E	G	H	J	K
Approximate wts., ozs..	$\frac{1}{2}$	1	$1\frac{1}{2}$	$2\frac{1}{2}$	3	4	5	6	8
Diam. of faces.....	$\frac{5}{8}$ "	$\frac{3}{4}$ "	$\frac{7}{8}$ "	1"	$1\frac{1}{8}$ "	$1\frac{1}{4}$ "	$1\frac{3}{8}$ "	$1\frac{1}{2}$ "	$1\frac{5}{8}$ "
Price, each.....	\$0.60	\$0.60	\$0.65	\$0.65	\$0.72	\$0.72	\$0.90	\$0.90	\$1.00



No.	Diam. Face	Dozen
1	$\frac{3}{8}$ "	\$6.50
2	1 "	7.50
3	$1\frac{1}{8}$ "	8.25
4	$1\frac{1}{4}$ "	9.00



No.	Diam. Face	Dozen
5	$\frac{7}{8}$ "	\$6.50
6	1 "	7.50
7	$1\frac{1}{8}$ "	8.25
8	$1\frac{1}{4}$ "	9.00



GENUINE "STUBS" CHASING HAMMERS.

Made of Extra Quality English Steel.

Numbers	L	M	N	P	R	T
Approximate wts., ozs.	1	2	3	4	5	6
Price, each	\$0.60	\$0.70	\$0.80	\$0.95	\$1.10	\$1.40

NOTE—All above prices do not include Handles.

Handles are extra. (See below.)

CHASING HAMMER HANDLES.

These Handles are made expressly for Chasing Hammers. The wood used is the Best Select Second Growth Hickory.

No. U—Round shape handle.....\$1.00 dozen; 10c each

No. V—Oval shape handle..... 1.20 dozen; 12c each

No. W—Revolver shape handle..... 1.50 dozen; 15c each

Order by respective number and be sure to affix the page number.

POWER DROP (PRESSES) HAMMERS.

The Oliver Quality line of drop presses are of a very massive design, proportioned to meet the severest requirements of drop-press practice.

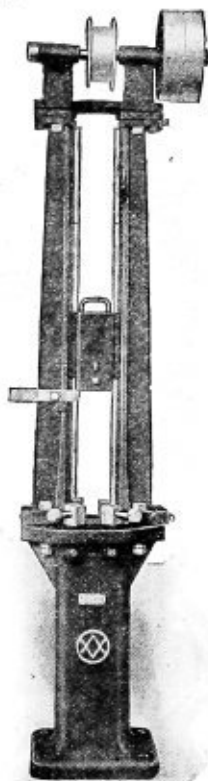
The Bases are rectangular in section, and are ten times the weights of the hammers, the most efficient ratio.

The Hammers are unbreakable, the lifting hooks of wrought iron being cast solidly into the hammers themselves.

The Uprights are unusually stiff, only one being adjustable. The adjusting device is very simple, but is one that will hold the upright securely in its proper position.

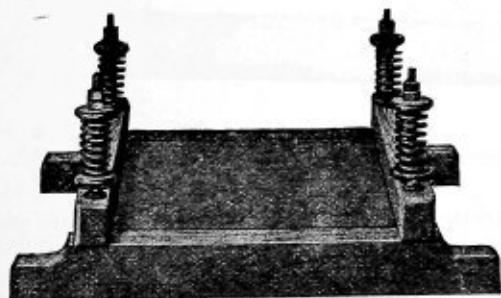
The Poppets are of solid steel. The Poppet screws are of hardened tool steel, having threads of very fine pitch to aid in making accurate adjustments and to lessen their tendency to loosen.

	No. 1	No. 2
Price	Upon application only	
Height over all	88"	110"
Height of base	29"	30"
Length of uprights	48"	66"
Distance between uprights.....	5"	7"
Distance between poppets.....	4 $\frac{11}{16}$ "	7 $\frac{1}{8}$ "
Stroke	30"	48"
Size of tight and loose pulleys.....	10"x2"	14"x3"
Revolutions per minute.....	100	100
Weight of hammer.....	50 lbs.	100 lbs.
Weight of base	500 lbs.	1,000 lbs.
Total weight	740 lbs.	1,480 lbs.



SPRINGBOARD FOUNDATION.

Price (Genial), \$12 00



The Springboard Foundation is a very efficient device to dampen the vibrations of drop presses. It will enable a drop press to be used in a building of the very weakest character, or in one where continued vibration would be annoying to other tenants.

It can be adjusted to accommodate drop presses of different weights, or to be adapted for use in buildings of different degrees of weakness.

MAYDOLE HAMMERS.

It is now more than sixty years since David Maydole established himself in the Business of Hammer-making.

Any Maydole Hammer which proves to be defective with proper usage, will, if returned to us, be replaced.



BALL PEIN HAMMERS, OCTAGON.

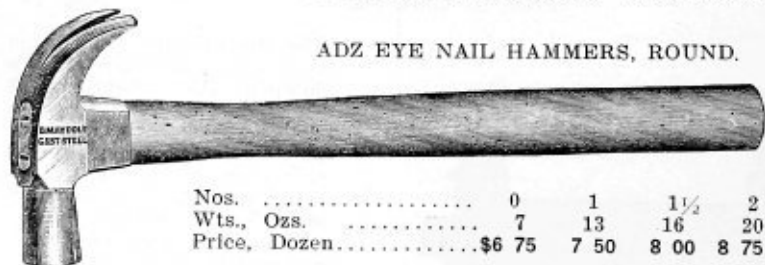
Nos.....	129 $\frac{3}{4}$	129 $\frac{1}{2}$	129	128 $\frac{1}{2}$	128	127	126
Wts., ozs. ..	1	2	3	5	7	10	13
Dozen	\$9 00	9 00	9 00	9 25	9 50	10 00	10 50
Nos.	125	124	123	122	121	120	
Wts., Ozs.	16	20	24	30	36	48	
Dozen	\$11 25	12 25	13 50	15 00	17 00	20 00	



CROSS PEIN HAMMERS, OCTAGON.

Nos.	329 $\frac{1}{2}$	329	328 $\frac{1}{2}$	328	327	326
Wts., Ozs.	2	3	5	7	10	13
Nos.	325	324	323	322	321	320
Wts., Ozs.	16	20	24	30	36	48

Prices Same as Respective Weights Above.



ADZ EYE NAIL HAMMERS, ROUND.

Nos.	0	1	1 $\frac{1}{2}$	2	3
Wts., Ozs.	7	13	16	20	26
Price, Dozen.....	\$6 75	7 50	8 00	8 75	11 50

Every hammer has a second growth Hickory Handle fitted. Weights are of Hammer only.

Order by respective number and avoid error, viz.: 2 only No. 328 $\frac{1}{2}$ —308.

PLANISHING HAMMERS.

With Mirror Polished Faces.

All Weights and Dimensions are Approximate.



(No. 658)

Diameter of Faces	Weight	Each
$\frac{3}{4}$ "	$\frac{1}{4}$ lb.	\$0 70
$\frac{1}{2}$ "	$\frac{3}{8}$ lb.	70
1"	$\frac{1}{2}$ lb.	70
$1\frac{1}{16}$ "	$\frac{3}{4}$ lb.	70
$1\frac{1}{8}$ "	1 lb.	70
$1\frac{3}{8}$ "	$1\frac{1}{4}$ lbs.	88
$1\frac{1}{2}$ "	$1\frac{1}{2}$ lbs.	1 05
$1\frac{5}{8}$ "	$1\frac{3}{4}$ lbs.	1 22
$1\frac{3}{4}$ "	2 lbs.	1 40
$1\frac{7}{8}$ "	$2\frac{1}{2}$ lbs.	1 75
2"	3 lbs.	2 10
$2\frac{1}{8}$ "	$3\frac{1}{2}$ lbs.	2 45
	4 lbs.	2 80



(No. 659)

This hammer is also known as a "Case" Hammer.

Diameter of face.....	$\frac{7}{8}$ "	1"	$1\frac{1}{4}$ "
Length	$1\frac{1}{2}$ "	$1\frac{3}{4}$ "	2"
Each	\$0 50	65	85

Note—Above prices do not include handles—these are extra.

HANDLES FOR ABOVE HAMMERS.

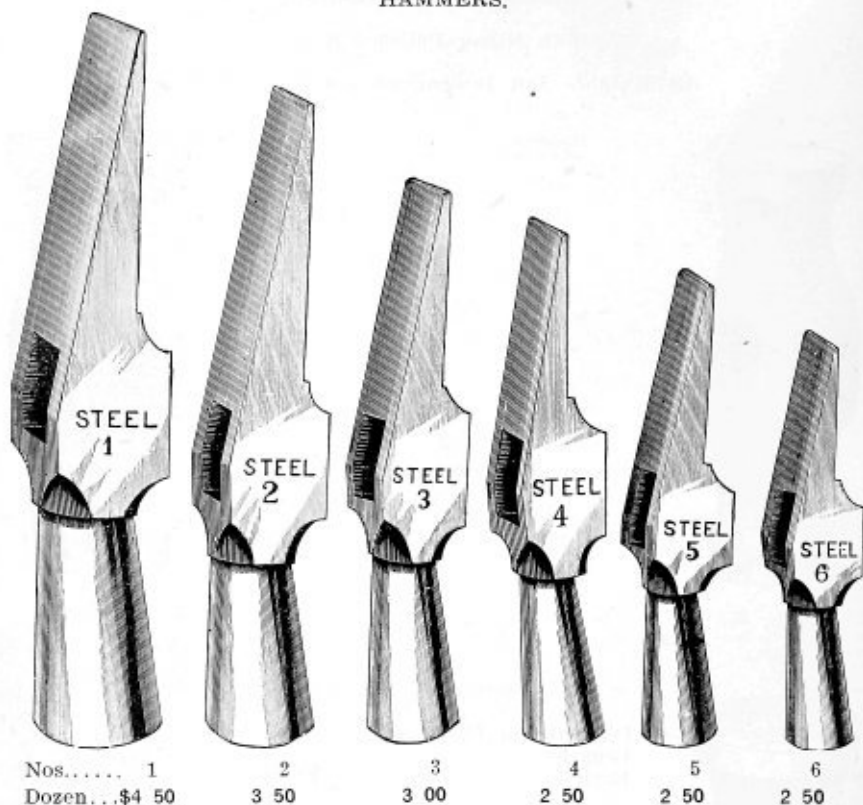


Second Growth Hickory.

Lengths	12"	13"	14"	15"	16"	18"	20"
Dozen	\$0 55	55	55	55	70	80	1 00
Each.....	05	05	05	05	07	08	10

Specify exactly what you want and be sure to affix the page number to each item ordered, it saves time.

HAMMERS.



HANDLES.



Handles Made Especially for the Above.

SMALL SIZE		MEDIUM SIZE		LARGE SIZE	
No. 12	Maple.	No. 15	Maple.	No. 18	Maple.
No. 13	Ebony.	No. 16	Ebony.	No. 19	Ebony.
No. 14	Rosewood.	No. 17	Rosewood.	No. 20	Rosewood.
All Sizes of Maple.....		\$0 30 Dozen		5c Each	
All Sizes of Ebony		90 Dozen		10c Each	
All Sizes of Rosewood.....		1 50 Dozen		15c Each	

PLAIN EYE RIVETING HAMMERS.

BILLINGS & SPENCER DROP-FORGED HAMMERS.



	Weight.	Dozen.
No. 26.	1½ oz.	\$5.00
No. 27.	2½ oz.	5.25
No. 28.	3 oz.	5.50
No. 29.	4 oz.	5.75
No. 30.	4 oz.	5.50
No. 31.	7 oz.	5.75
No. 32.	9 oz.	6.00
No. 33.	12 oz.	6.25
No. 34.	15 oz.	6.50
No. 35. 1 lb.,	2 oz.	7.00
No. 36. 1 lb.,	6 oz.	7.50
No. 37. 1 lb.,	10 oz.	8.00

Weight does not include handle.

WARNER & NOBLE HAND-FORGED HAMMERS.



Straight Peen.

	Weight.	Per
	Lb. Oz.	Doz.
No. 000, Solid cast steel.	¾	\$3.60
No. 00, " " " "	1	3.60
No. 0, " " " "	2	3.60
No. 1, " " " "	4	3.60
No. 1½, " " " "	5½	3.80
No. 2, " " " "	7	4.00
No. 3, " " " "	10	4.60
No. 4, " " " "	15	5.40
No. 5, " " " " 1 2		6.20
No. 6, " " " " 1 5		7.00
No. 7, " " " " 1 10		8.80



Cross Peen.

Straight Peen Hammers **NEVER**
SENT unless specified.

	Weight.	Per
	Oz.	Doz.
Both above styles.		
No. A, Solid cast steel..	1½	\$6.00
No. B, " " " "	3	6.50
No. C, " " " "	6	7.00

The handles are of clear Hickory, thoroughly seasoned. These hammers are warranted to give satisfaction.

Affix page number to item number—sure.

ENGRAVERS' HANDLES.

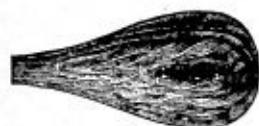
Made of thoroughly selected seasoned woods.



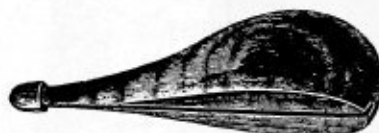
No.	Diam.	Length	Dozen
D	1 1/8"	1 1/2"	\$0.30
E	1 3/16"	1 3/4"	.30
F	1 1/4"	2 1/8"	.30



No.	Diam.	Length	Dozen
J	1 1/16"	2 "	\$0.60
K	1 1/16"	2 1/2"	.60
L	1 1/16"	3 "	.60



No.	Diam.	Length	Dozen
G	1 1/4"	2 "	\$0.30
H	1 1/8"	2 3/8"	.30



No.	Diam.	Length	Dozen
P	1 3/16"	3 5/8"	\$0.50
Q	1 3/8"	3 5/8"	.50
R	1 1/2"	3 5/8"	.50



No.	Diam.	Length	Dozen
I	1 3/16"	3 3/8"	\$0.50

This handle has five holes drilled in the groove to receive a bent tang graver, held in groove by cord wound around the small tapered end.

Each of these three handles has five holes drilled in the groove to receive a bent tang graver, held in groove by cord wound around the small tapered end.



No.	Diam.	Length	Dozen
M	1 1/16"	4 1/4"	\$1.50
N	1 1/4"	4 1/4"	1.50

All of above Handles made of select Maplewood.



No.	Diam.	Length	Dozen
W	1 "	3 1/2"	\$2.50
X	1 1/8"	3 1/2"	2.50
Y	1 1/4"	3 1/2"	2.50
Z	1 3/8"	3 1/2"	2.50

Rosewood Handles with ferrule and adjustable Ratchet.



No.	Diam.	Length	Dozen
S	1 "	3 1/2"	\$2.00
T	1 1/8"	3 1/2"	2.00
U	1 1/4"	3 1/2"	2.00
V	1 3/8"	3 1/2"	2.00

Plain Rosewood Handles with ferrule clamp.

MAPLEWOOD HANDLES, ALL NUMBERS.....\$0.30 Doz.



No.	Diam.	Length
14	1 "	1½"
15	1¼"	1½"
16	1¼"	2 "



No.	Diam.	Length
16½	1¾"	1½"
17	1¾"	1¾"
18	1¾"	2 "
19	1¾"	2¼"
20	1¾"	2½"



No.	Diam.	Length
A	1¼"	1½"
B	1¾"	1¾"
C	1¾"	1¾"



No.	Diam.	Length
21	1 "	2½"
22	1¾"	2¾"
23	1¾"	3 "



No.	Diam.	Length
24	1¼"	2½"
25	1¾"	3 "
26	1½"	3½"



No.	Diam.	Length
1	1¼"	1 "
2	1¾"	1 1/16"
3	1½"	1¾"



No.	Diam.	Length
4	1 "	1¼"
5	1¼"	1¾"
6	1¾"	1½"



No.	Diam.	Length
6½	1¼"	1¾"
7	1 5/16"	1½"
8	1¾"	1¾"
9	1¾"	2 "
9½	1¾"	2¼"
9¾	1¾"	2½"



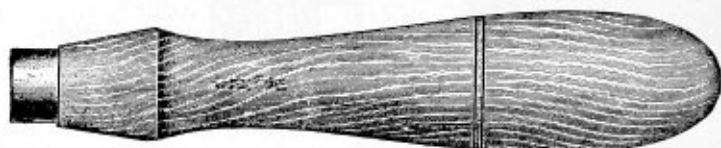
No.	Diam.	Length
101	1 "	1¾"
102	1¾"	1¾"
103	1¼"	1½"



No.	Diam.	Length
10	1 "	1 "
11	1¾"	1¾"
12	1¼"	1¼"
13	1¾"	1½"

FILE HANDLES.

Fancy Shape.

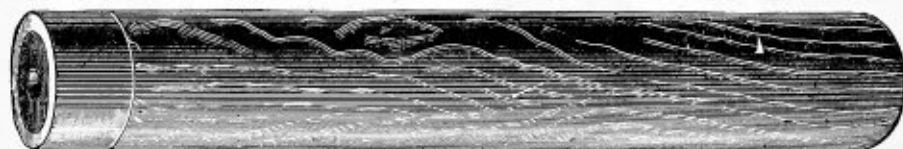


This Illustration Represents a Common File Handle.
Made of Thoroughly Seasoned Hard Wood.

Numbers.....	A	B	C	D	E	G	H
Diameter at Ferrule End	$\frac{3}{8}$ "	$\frac{1}{2}$ "	$\frac{5}{8}$ "	$\frac{3}{4}$ "	$\frac{7}{8}$ "	1"	1 $\frac{1}{4}$ "
Holds Files	3"	4"	5"	6"	8"	10"	12"

Assorted or Single Sizes, \$3.00 Gross.
Price Per Dozen, \$0.30

STRAIGHT FILE HANDLES.



Full Size Illustration of No. 4 Size.
All Sizes are 4 Inches Long.

Number	1	2	3	4	5
Diameter ...	$\frac{1}{4}$ "	$\frac{3}{8}$ "	$\frac{1}{2}$ "	$\frac{5}{8}$ "	$\frac{3}{4}$ "
For Files ...	3"	4"	5"	6"	8"

Sizes Assorted or Single, Rosewood, \$3.00 Gross
Price Per Dozen, \$0.35

STRAIGHT HARDWOOD HANDLES.

Number.....	J	K	L	M	N
Diameter ...	$\frac{1}{4}$ "	$\frac{3}{8}$ "	$\frac{1}{2}$ "	$\frac{5}{8}$ "	$\frac{3}{4}$ "

Single or Assorted Sizes, \$2.00 Gross
Price Per Dozen, \$0.25

Order by respective number and affix page number.

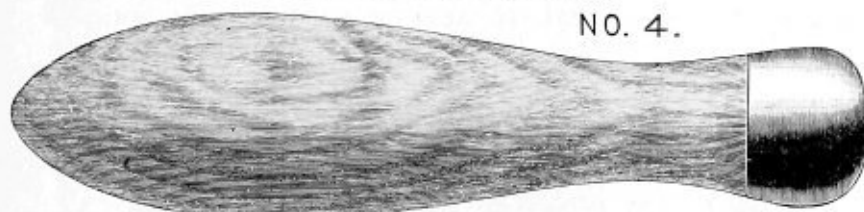
FERRULED FILE HANDLES.

Made of Birch Wood so as to Render Them Strong and Durable.

They are perfectly smoothed and shellaced, rendering them easy to the hand and readily cleaned.

To obtain the best use of a file it should be properly handled; this enables the user to get a firmer and a more convenient grasp, resulting in greater effectiveness with less exertion.

These handles will not split with any ordinary usage.



NO. 4.

Illustration is Full Size—Adapted for Files 8 inches Long.

No. 1.	Adapted for Files	14 inches long	Dozen	\$0.80
" 2.	" " "	12 " "	" "	.75
" 3.	" " "	10 " "	" "	.70
" 4.	" " "	8 " "	" "	.65
" 5.	" " "	6 " "	" "	.60

The Ferrules used on above Handles are Brass.

They are swaged and spun about the end where the tang enters to prevent the handle from splitting.

STRAIGHT FERRULED HANDLES.

Shaped in form as shown. With brass ferrules inserted in the wood around the opening, to prevent splitting (see illustration). Especially designed for users of small files.

NO. 14.



Illustration Full Size of No. 14 Handle.

No. 11.	Adapted for Files up to 3" long	Dozen	\$0.60
" 12.	" " " 3" " 4" "	" "	.55
" 13.	" " " 4" " 5" "	" "	.50
" 14.	" " " 5" " 6" "	" "	.45
" 15.	" " " 6" " 8" "	" "	.40

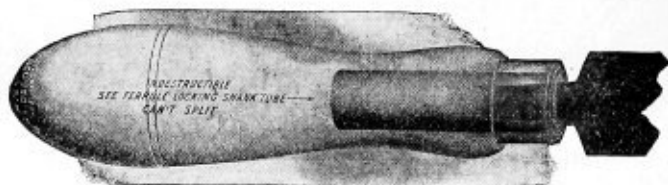
OSGOOD'S PATENT "INDESTRUCTIBLE" FILE AND TOOL HANDLES.

Description:

A thin steel tube is forced into the handle the length of file shank. This tube locks outer ferrule and takes the pressure exerted by file shank. This tube positively prevents splitting. No objectionable metallic surfaces in contact with hands in using. Prevents injury from file shank entering hand through split handle. These handles are practically indestructible with ordinary use. One will outlast ordinarily twenty to thirty common wood handles.

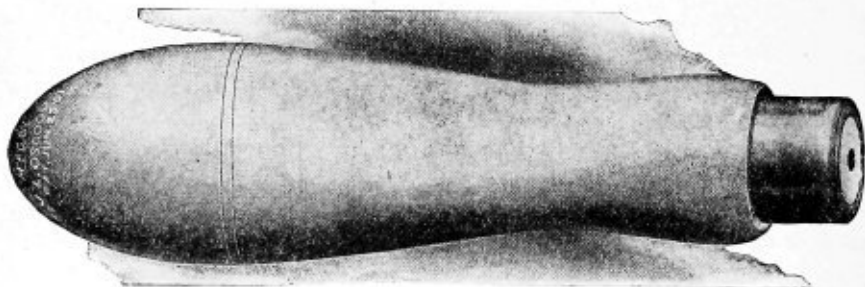
SENT ON APPROVAL TO ANY RESPONSIBLE CONCERN.

Illustrations are Full Size.



No. 1 \$8 00 per Gross.

For Files 4" to 6" long inclusive.



No. 2 \$8 50 per Gross.

For Files 6" to 8" long inclusive.

No. 3 \$9 00 per Gross.

For Files 8" to 10" long inclusive.

No. 4 \$9 50 per Gross.

For Files 10" to 14" long inclusive.

No. 5 \$10 00 per Gross.

For Files 14" to 20" long inclusive.

Never fail to affix page number to item number.

LOCK JAW FILE AND SOLDERING COPPER HANDLES.

Illustration is Full Size of a No. 5 Handle.



These Handles are of hardwood, with coppered malleable iron ferrules.

They will hold firmly and rigidly any make of files or any tanged tool, whether the tang is flat, round or square.

Adapted for files, screw drivers, chisels, etc.

Will admit tangs without danger of splitting the handle.

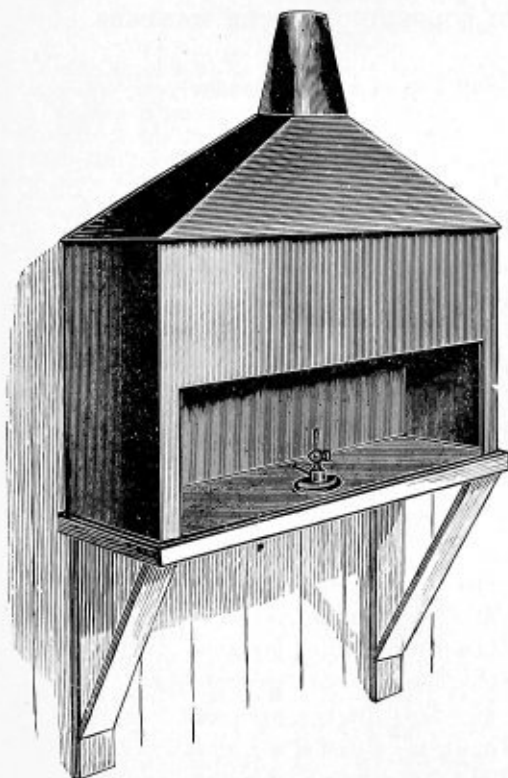
PRICE LIST.

No. 1,	for files 13 inches and larger, per gross	\$6 00
No. 2,	for files 9 to 12 inches, per gross	5 50
No. 3,	for files 7 to 10 inches, per gross	5 25
No. 4,	for files 5 to 8 inches, per gross	5 00
No. 4½,	for files 4 to 7 inches, per gross	4 75
No. 5,	for files 2 to 5 inches, per gross	4 50
Assorted, Nos. 1 to 5 inches,	per gross	5 00

Size No. 6 is for use with Soldering Coppers, per gross\$8 00

Special Note—If our customers will use our new system of writing orders it will mean a great benefit to both of us. It will facilitate our filling orders much quicker and without error. It also will prove of great value when you check your bills, because you will know the pages items are on.

JEWELERS' HOODS.



The adjoining illustration represents a Soldering Hood. These are specially made for jewelers' use. Each one is fitted with Iron Shelf Brackets.

For	Dimensions	Each
1 man	12x18x46"	\$ 7 75
2 men	12x48x46"	10 00
3 men	12x72x46"	14 00
4 men	12x90x46"	21 00

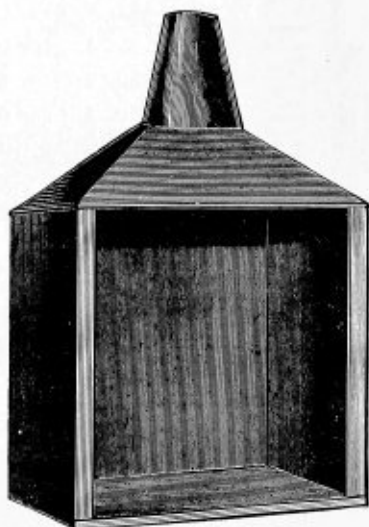
The adjoining illustration represents a Melting Furnace Hood.

With Open Front\$ 7 75

With a Sliding Door Front.....\$12 50

Iron Table for same, 22x33x28½" high.

\$6 50



Use our new system in ordering. It's a big help.

INGOT MOULDS.

THE "FRENCH STYLE."

No. 1—5¼" long, for plate, 1" wide by ¼" thick, and three sizes wire: ¼", 5/16", ¾" square.

No. 2—9½" long, for two sizes plate, 1½" wide by 5/16" thick, ¾" wide by 5/16" thick, and three sizes wire: ¼", 5/16", ¾" square.

No. 1. \$6.50 each

No. 2. 8.50 each

THE RAZOR STROP STYLE.

No. 3 is 11" long, for three sizes wire—¼", 5/16", ¾"—square, and for plate 1" wide x ¼" thick.

No. 4 is 11" long, for three sizes wire—¼", 5/16", 9/16"—square, and for plate 1" x 7/16" thick.

No. 3. \$6.50 each

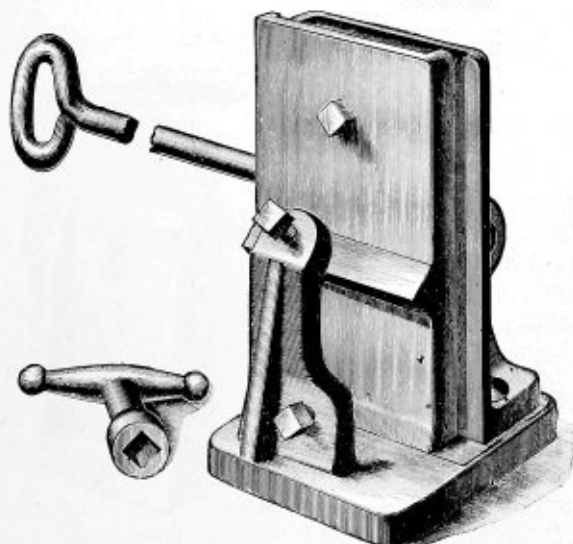
No. 4. 9.00 each

ADJUSTABLE AND SEPARABLE INGOT MOULDS.

Patented.

No. 5.

The Adjustable Moulds are constructed in such a manner that they can be adjusted to cast different widths of ingots. The Separable Moulds are not adjustable, and are constructed with round corners on the edges to prevent the metal fraying on the edge when rolled, a feature which will be appreciated by users. There is no taper to the inside of these moulds, and consequently the ingots will be of uniform thickness and width through entire length. By loosening the screws shown in cut the ingot will be free to drop out.

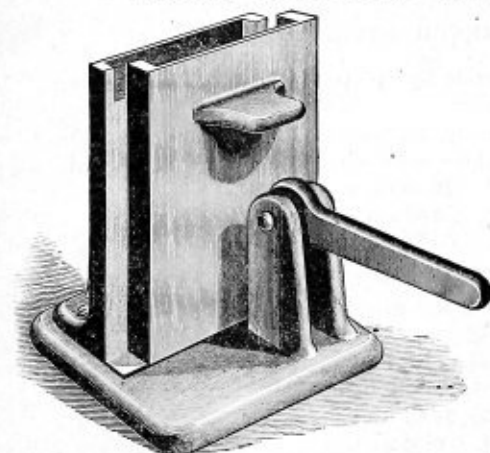


Details and Prices upon Application.

Always affix page number to the item number. It's the simplest way to write an order and the safest way to prevent error—viz.:

1 only No. 3—319.

UPRIGHT "ADJUSTABLE" SLIDING INGOT MOULDS.



The bodies of these ingot moulds are well made of close gray iron; the lever of malleable iron. The inside surfaces are milled perfectly smooth, and coated with a compound to prevent the metal adhering to them. They are adjustable sideways, so that any width of metal, from $2\frac{3}{4}$ inches down, can be cast. In ordering, give number of ingot mould and thickness of same.

Specify Thickness Wanted,
SURE.

- No. 1. 3" high, $2\frac{3}{4}$ " wide, $\frac{1}{8}$ " or $\frac{3}{16}$ " thick. Price, \$2 00 each.
 No. 2. $4\frac{1}{2}$ " high, $2\frac{3}{4}$ " wide, $\frac{1}{8}$ ", $\frac{3}{16}$ " or $\frac{1}{4}$ " thick. Price, 2 50 each.
 No. 3. 6" high, $2\frac{3}{4}$ " wide, $\frac{1}{8}$ ", $\frac{3}{16}$ " or $\frac{1}{4}$ " thick. Price, 3 00 each.

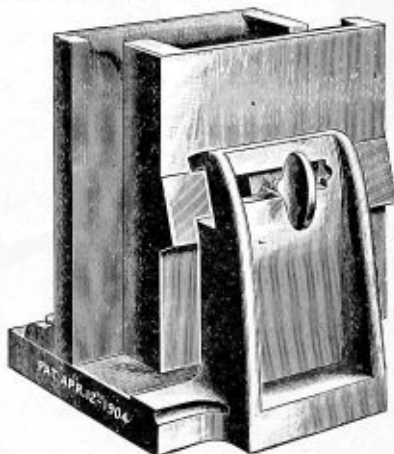
Weight of one cubic inch of pure gold, 8.4 oz.

Weight of one cubic inch of pure silver, 4.56 oz.

By means of the movable nut and thumb-screw, the loose half of the ingot may be fastened centrally at any point of adjustment from full width of $2\frac{7}{8}$ inches inside to narrowest width desired.

The pressure of the screw on the angled shoulder is also downward and will prevent leakage at the bottom so prevalent in similar ingot moulds.

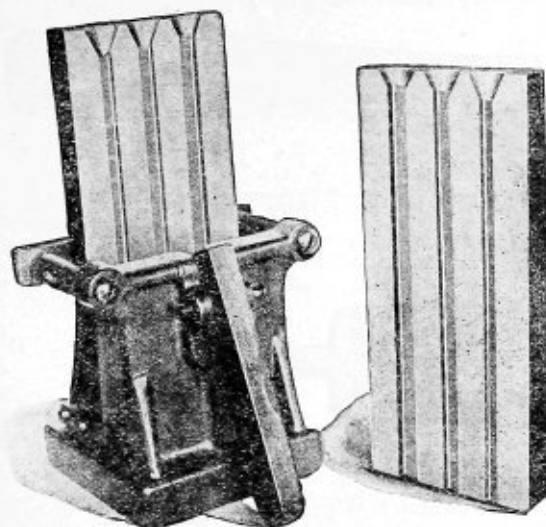
Specify Thickness Wanted—SURE.



	Height	Width	Thickness	Price
No. 4	3"	$2\frac{7}{8}$ "	$\frac{1}{8}$ ", $\frac{3}{16}$ ", $\frac{1}{4}$ "	\$2 75 each.
No. 5	$4\frac{1}{2}$ "	$2\frac{7}{8}$ "	$\frac{1}{8}$ ", $\frac{1}{4}$ ", $\frac{3}{16}$ ", $\frac{1}{2}$ "	3 00 each.
No. 6	6"	$2\frac{7}{8}$ "	$\frac{1}{8}$ ", $\frac{1}{4}$ ", $\frac{3}{16}$ ", $\frac{1}{2}$ "	3 50 each.
No. 7	9"	$2\frac{7}{8}$ "	$\frac{3}{16}$ ", $\frac{1}{2}$ ", $\frac{5}{16}$ ", $\frac{3}{4}$ "	5 50 each.

Affix page number to every item number.

NON-ADJUSTABLE INGOT MOULDS.



Separated.

All bars cast in these moulds have the corners slightly rounded, allowing the stock to be rolled to any thickness without fraying the edges. This is a valuable feature.

Each mould is carefully machined and free from defects, and efficient provision is made to match the moulds. The cam lever is an effective device for clamping the parts and may be used as a rest for tilting the mould when pouring.

For Casting Square Bars.
(Rounded Corners.)

No. 8. \$4 00.

Three sizes in one mould, viz.:

$\frac{3}{16}$ " , $\frac{1}{4}$ " , $\frac{5}{16}$ ".

No. 9. \$4 00.

Three sizes in one mould, viz.:

$\frac{3}{8}$ " , $\frac{7}{16}$ " , $\frac{1}{2}$ ".

RECTANGULAR SHAPE MOULDS.

Following sizes are carried in stock:

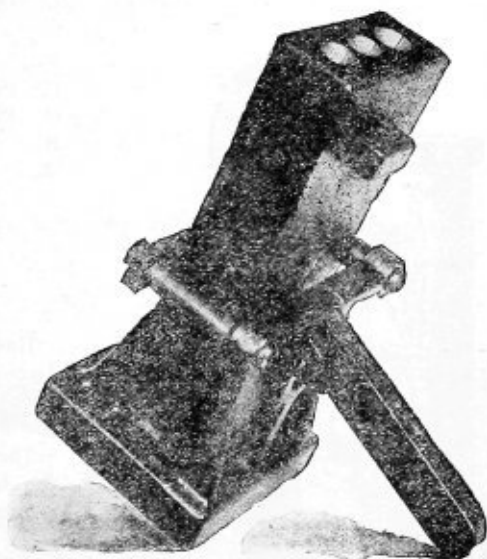
Widths, 1", 1 $\frac{1}{4}$ ", 1 $\frac{1}{2}$ ", 1 $\frac{3}{4}$ " and 2".

Each width can be had in the following thicknesses:

$\frac{3}{16}$ " , $\frac{1}{4}$ " or $\frac{5}{16}$ ".

All Sizes 6" long.

\$4 00 each, any size.



Complete.

Note—Moulds of any width not over 2 inches, or any thickness not over $\frac{1}{2}$ -inch, will be made to order without additional charge.

JOINT WIRE FILING PLATES.

Any Size
\$1.00 each



Numbers.....	A	B	C	D
Thickness	3/64"	1/16"	3/32"	1/8"

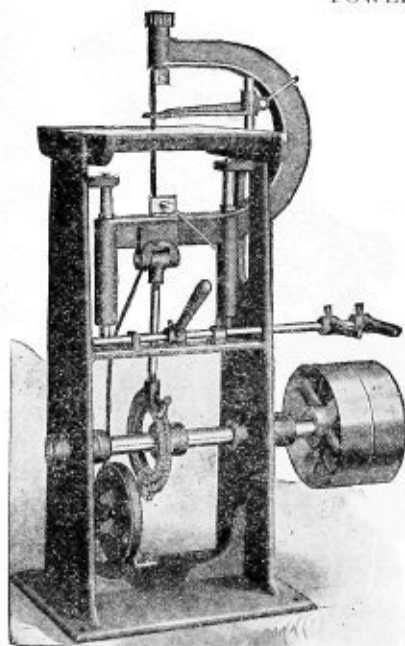
These are made of the Best Tool Steel, Thoroughly Hardened.



No. E. \$1.85 each

This is Known as Large Joint Wire Filing Plate.

POWER JIG SAW.



No.

F.	Price of Machine.....	\$70.00
G.	Price of Coils 3/16x50'	3.50
H.	" " " 1/4x50	3.50
J.	" " " 3/8x50	3.00

Stroke 3"

Table 14" Square

High 36"

Has tight and loose pulleys, 10" diameter by 2 1/2" face, and should make about 175 revolutions for steel and 300 for brass or any soft metals.

The saws are coiled in a magazine at the base of the machine, and can be drawn through as required. This allows the saws to be used their entire length instead of only in the center, as on blades of fixed length.

The Only Machine (of its kind) Made.

BENCH OR PEGWOOD KNIVES.



No. X2. SHARP POINT. Full Size.

"HARRINGTON" BRAND, WHITE HANDLES.

Order No.,	0	1	2	3	4	5
Length,	2 $\frac{3}{4}$ "	3 $\frac{1}{4}$ "	4"	4 $\frac{1}{2}$ "	4 $\frac{3}{4}$ "	5"
Per Doz.,	\$1 00	\$1 00	\$1 00	\$1 00	\$1 00	\$1 10

"DEXTER" BRAND, RIVETED BURNT HANDLES.

Order No.,	x0	x1	x2	x3	x4	x5
Length,	2 $\frac{3}{4}$ "	3 $\frac{1}{4}$ "	4"	4 $\frac{1}{2}$ "	4 $\frac{3}{4}$ "	5"
Per Doz.,	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50	\$1 60



No. X3. SQUARE POINT. Full Size.

"HARRINGTON" BRAND, WHITE HANDLES.

Order No.,	00	10	20	30	40
Length,	2"	2 $\frac{1}{2}$ "	3"	3 $\frac{1}{2}$ "	3 $\frac{7}{8}$ "
Per Doz.,	\$1 00	\$1 00	\$1 00	\$1 00	\$1 00

"DEXTER" BRAND, RIVETED BURNT HANDLES.

Order No.,	x00	x10	x20	x30	x40
Length,	2"	2 $\frac{1}{2}$ "	3"	3 $\frac{1}{2}$ "	3 $\frac{7}{8}$ "
Per Doz.,	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50



No. 96.

Fine selected steel blade, rosewood handle, beautifully finished. This knife will hold a good edge. Price, 35c

Do not fail to affix page number to the item number ordered, thus: $\frac{1}{2}$ Doz. X30—323.

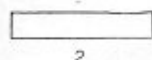
KNURLS.

Numbers
Indicate Shape and Width of
Face.

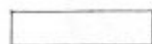
Letters
Indicate Pattern or Design.

Examples
8-A is a Wide Flat Face Knurl
with Fine Straight Lines.

7-C is a Wide Concave Face
Knurl with Coarse Straight
Lines.



2



4



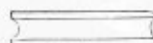
6



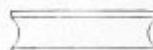
8



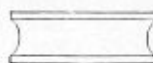
1



3



5



7



A



B



C



D



E



F



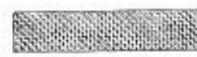
G



H



I



J



K



L



M



N

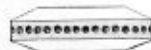


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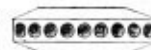
FANCY KNURLS.



11



12



13



14



15



16

Nos. 11, 12 and 13. \$5 00 Dozen, 50c Each.

All Other Numbers. 4 00 Dozen, 40c Each.

The above are patterns most used. We can supply almost anything in the Knurl line. Send sample or impression.

Numbers 7 and 8 are the only widths carried regularly in stock. All other widths made to order only.

ADJUSTABLE KNURL HOLDERS.

No. 20.

Will hold Knurls any width up to $\frac{1}{2}$ inch.

\$0 50 Each.

KNURL SETS.

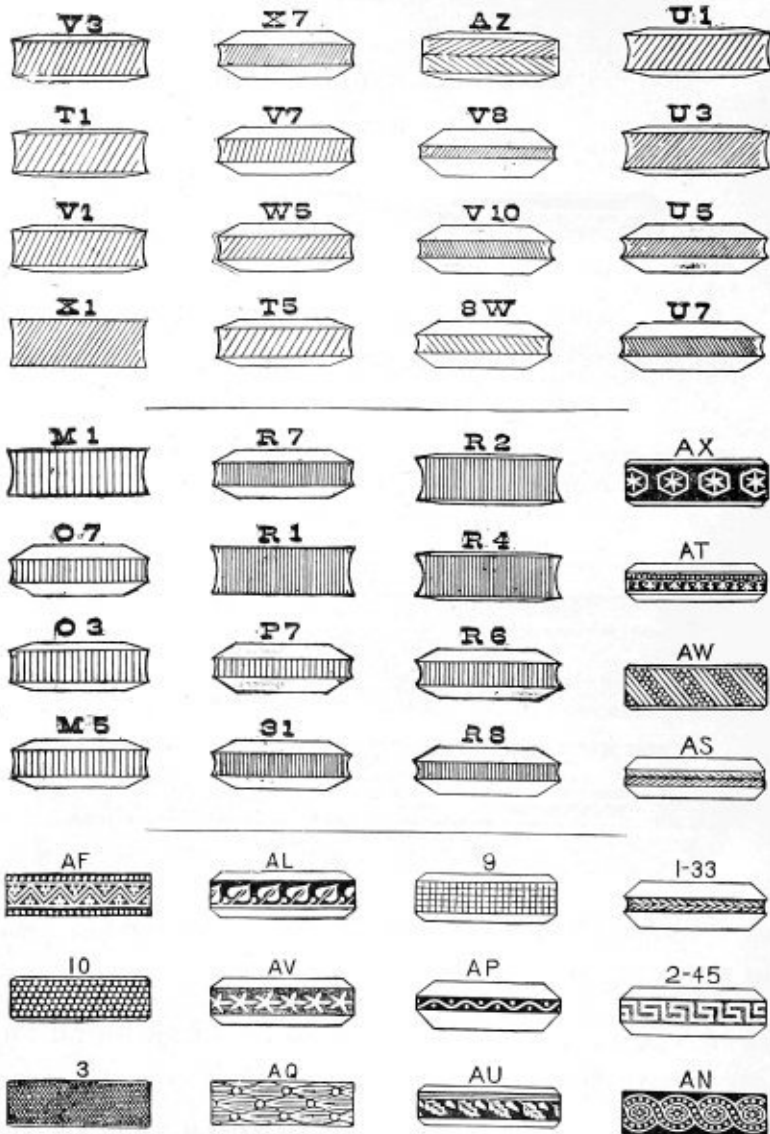


No. 6. Contains 6 Knurls (No. 8-B, 8-E, 8-K, 4-A, 5-E, 7-B) and Adjustable Knurl Holder. \$3 00.

No. 12. Contains 12 Knurls (No. 8-A, 8-B, 8-G, 8-H, 8-J, 8-K, 5-B, 7-E, 7-H, 8-N, 12, 15) and Adjustable Holder. \$6 00.

No. 24. Contains 24 Knurls (8-A, 8-B, 8-C, 8-E, 8-G, 8-H, 8-I, 8-J, 8-K, 8-L, 8-M, 8-N, 8-O, 3-G, 5-H, 7-A, 7-B, 7-C, 6-H, 11, 12, 14, 15, 16) and Adjustable Knurl Holder. \$10 00.

KNURLS OR MILLING WHEELS.

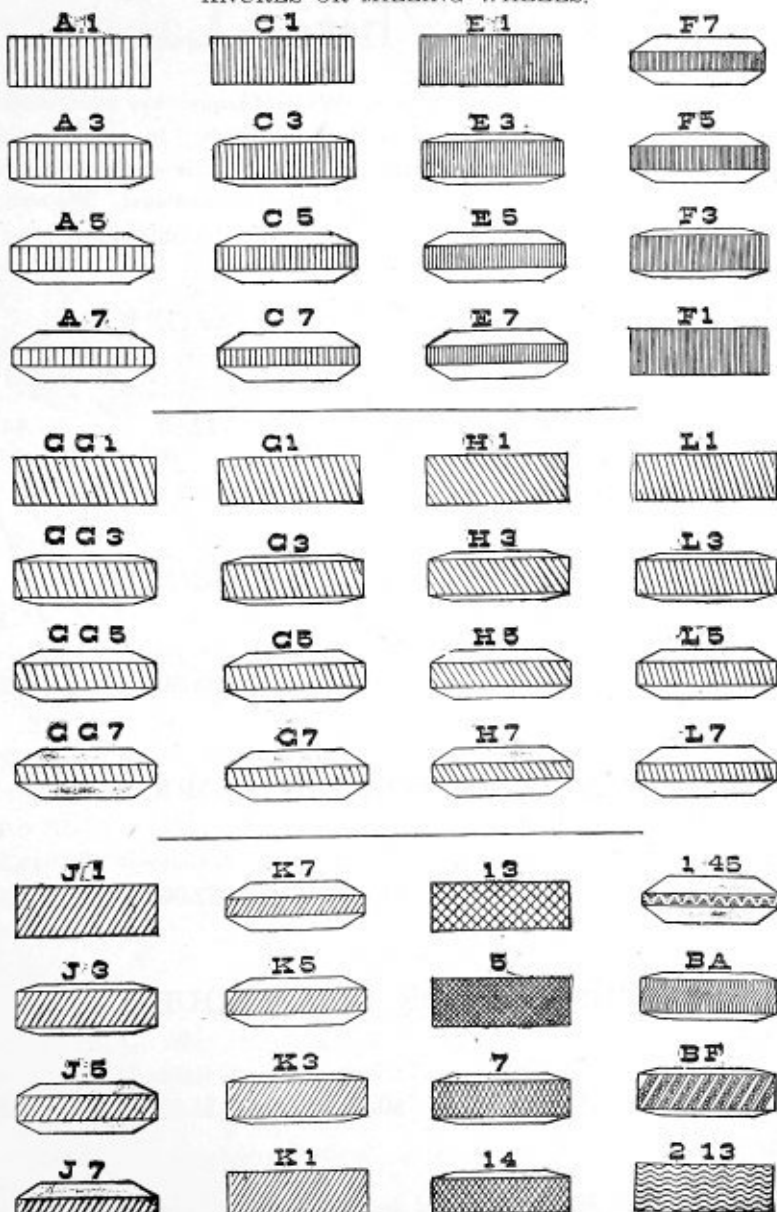


All Cuts Are Exact Size of Knurls.

Price of All Above Patterns \$3 00 per Dozen, 30c Each.

All Are $\frac{3}{4}$ " Diameter x $\frac{1}{4}$ " Thick With $\frac{3}{16}$ " Holes.

KNURLS OR MILLING WHEELS.



Price of All Above Patterns \$3 00 per Dozen. 30c Each.
 All Are $\frac{3}{4}$ " Diameter x $\frac{1}{4}$ " Thick With $\frac{1}{8}$ " Holes.

Lafayette White Lacquers

By entirely new methods Sublime White Lacquer has been perfected. It creates a soft, rich, pleasing, light and brilliant finish. In application it is simple, safe, economical and instantaneous. The result is extreme durability. Proof against extremes of either heat or cold, air moisture and dust. The rich, full, perfect finish is incomparably the best for silver, gold, silver-plate, gold-plate and art bronze work.

LACQUER FOR BRUSH WORK

Numbers	A	B	C	D	E
	$\frac{1}{2}$ Pint	1 Pint	1 Quart	$\frac{1}{2}$ Gallon	1 Gallon
	\$0.45	\$0.80	\$1.40	\$2.50	\$4.50

Note—This grade can be applied without Thinner.

THINNER FOR BRUSH LACQUER

Numbers	G	H	J	K	L
	$\frac{1}{2}$ Pint	1 Pint	1 Quart	$\frac{1}{2}$ Gallon	1 Gallon
	\$0.35	\$0.60	\$1.00	\$1.80	\$3.35

LACQUER FOR DIP WORK

Numbers	M	N	P	R	S
	$\frac{1}{2}$ Pint	1 Pint	1 Quart	$\frac{1}{2}$ Gallon	1 Gallon
	\$0.35	\$0.60	\$1.10	\$2.00	\$3.85

THINNER FOR DIP LACQUER

Numbers	T	U	V	W	X
	$\frac{1}{2}$ Pint	1 Pint	1 Quart	$\frac{1}{2}$ Gallon	1 Gallon
	\$0.25	\$0.40	\$0.75	\$1.35	\$2.50

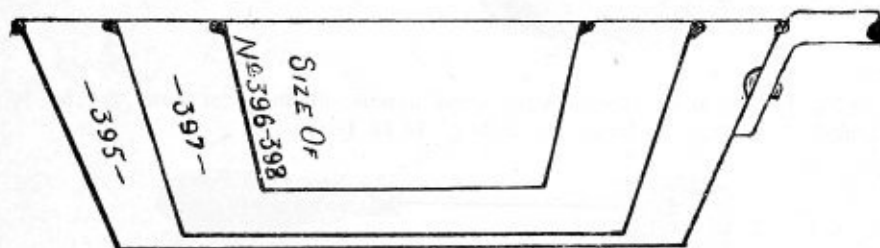
Directions: Where a Thinner is needed use one part of Thinner to two or three parts of Lacquer

COPPER LADLES.

The shape of Melting Ladles or Pickle Pans of this series is shown in illustration of No. 395 Pickle Pan, and the outline cut shows exact sizes. The pan is made of heavy spun copper, and is riveted to stout brass wire, extending entirely through a wooden handle, terminating with a hook, which allows the pan to be hung up, or maintains it on a level when placed upon a bench, making it impossible to upset the pan.



No. 395. Pickle Pan.



Exact Sizes.

No: 395, 4 inches diameter, $1\frac{1}{8}$ inches deep, or No. 397, 3 inches diameter, $1\frac{1}{8}$ inches deep.

No. 396, $1\frac{1}{2}$ inches diameter, $\frac{7}{8}$ inches deep.

No. 398 Pickle Pan and Melting Ladle is identical with No. 396 as to size and shape, but is not provided with hook on handle.

PRICES:

No. 395.	Copper Pickle Pan, 4-inch, with hook	\$0 75
No. 397.	Copper Pickle Pan, 3-inch, with hook	50
No. 396.	Copper Pickle Pan and Melting Ladle, $1\frac{1}{2}$ inches, with hook....	35
No. 398.	Copper Pickle Pan and Melting Ladle $1\frac{1}{2}$ inches, without hook,	25

Remember our new system of writing orders is to combine the item number with its page number, viz.: $\frac{1}{2}$ Doz. No. 397-329. The first is item number the second the page number.

COPPER LADLES OR ACID PANS.**1846**

No. 1846. Copper Ladle, with brass handle, diameter of bowl $3\frac{1}{8}$ by $\frac{7}{8}$ inches deep, extreme length 7 inches. **\$3 00 Dozen.**

**1847**

No. 1847. Copper Ladle, with wood handle, diameter of bowl $3\frac{1}{8}$ by $\frac{7}{8}$ inches deep, extreme length 10 inches. **\$4 00 Dozen.**

**1848**

No. 1848. Copper Ladle, with wood handle, diameter of bowl $1\frac{1}{2}$ by $1\frac{1}{4}$ inches deep, extreme length 8 inches. **\$4 00 Dozen.**

**1849**

No. 1849. Copper Ladle, with wood handle, diameter of bowl 2 by $1\frac{1}{8}$ inches deep, extreme length 8 inches. **\$4 00 Dozen.**

By affixing page number to every item number ordered, you can check your bills in one-tenth of the time quicker than by any other method.

MELTING LADLES.

Wrought Steel
One Piece—Bowl and Handle.

No. of Ladle.....	1	2	3	4	5	6	7	8
Diameter of Bowl.....	2½	3	3½	4	4½	5	5½	6
Price per Dozen.....	\$1 10	1 20	1 30	1 45	1 60	1 75	2 00	2 25

Wrought Steel
Solid Forged or Riveted Handle.

EXTRA DEEP WITH TWO LIPS.

No. of Ladle	10	20	30	40		Riveted
Diameter of Bowl	2½	3	3½	4		60 80
Price per Dozen.....	\$1 50	1 75	2 00	2 50		3 75 4 75

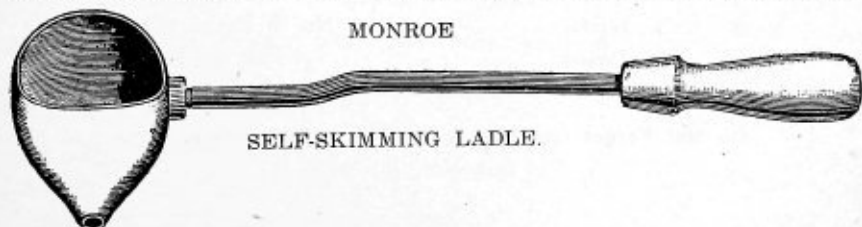


LONG LIP AND LONG WROUGHT HANDLE.

The nose or lip of this Ladle is made extra long, in order that the metal can be poured in places difficult to reach with the ordinary Ladle.

						Per Dozen
No. 100	Diameter, 2	inches.	Will hold ¾ lb.	Weight 6½ lbs.	.....	\$2 00
No. 110	Diameter, 2½	inches.	Will hold 1¼ lbs.	Weight 7½ lbs.	.....	2 25
No. 120	Diameter, 3	inches.	Will hold 1¾ lbs.	Weight 8½ lbs.	.....	2 75

MONROE



SELF-SKIMMING LADLE.

Nos.....	200	300	400	500	600	
Capacity	1¼	4¼	8	11	25 lbs. of lead each.	
Price.....	\$4 50	12 00	15 00	18 00	20 00 per dozen.	

SPHERICAL LAMPS.

These Lamps are Mounted in a Neat Metal Base.

	Each
"A" Small Size.....	\$0 60
"B" Large Size	1 25



No. A Small Size.

The globe is $2\frac{1}{4}$ " Diameter.

The tube is $\frac{1}{4}$ " Diameter.

No. C Extra Wicks.

$\frac{1}{4}$ " size, 25c Dozen.



No. B Large Size.

The globe is $3\frac{1}{2}$ " Diameter.

The wick is $\frac{3}{4}$ " Diameter.

No. D Extra Wicks.

$\frac{3}{4}$ " size, 40c Dozen.

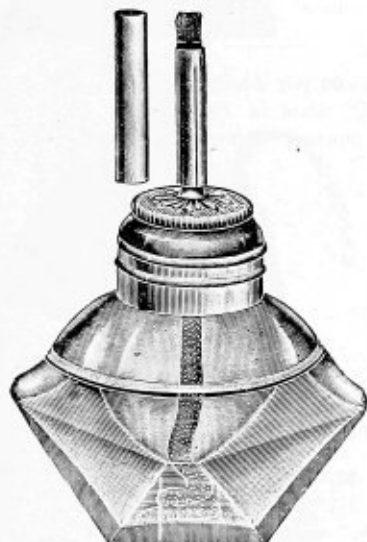
Do Not Forget our new system of writing orders, viz.:

$\frac{1}{2}$ Doz. No. "A"—332.

The first represents the item in question, the second the page on which the item is to be found. It saves much time.

SIMPLICITY LAMPS.

Note.—These illustrations are 25 per cent smaller than the actual sizes of the small and large sizes, respectively.



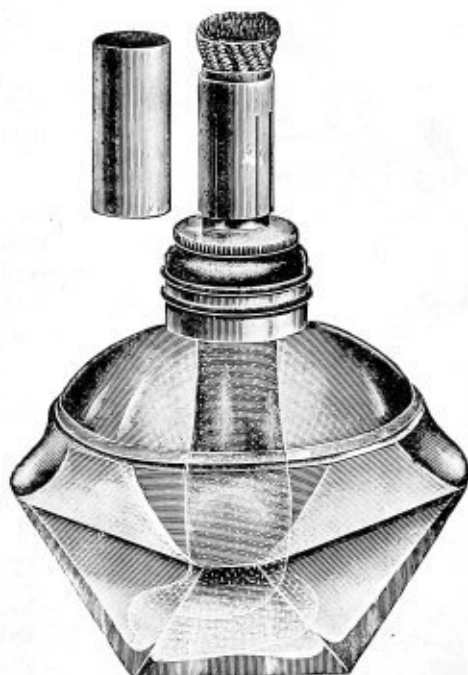
No. "E" Small Size.

\$0 60 each.

EXTRA WICKS.

This size lamp takes
wicks $\frac{3}{16}$ " Diam.

No. J 15c Dozen.



No. "G" Medium Size.

\$0 75 each.

EXTRA WICKS.

This size lamp takes
wicks $\frac{1}{4}$ " Diam.

No. K 20c Dozen.

No. "H" Large Size.

\$0 85 each.

EXTRA WICKS.

This size lamp takes
wicks $\frac{1}{2}$ " Diam.

No. L 25c Dozen.

IF you will use our new system in writing your orders, you can have your orders filled quicker,—also can check your bill without consulting an index to find the page number on which to find the items.

ALCOHOL LAMPS.

Glass Body, with metal Mountings.

No. 1. \$3.00 per dozen.

Body $2\frac{1}{2}$ " diam. x 1" deep.Holds 2 ounces. Takes $\frac{1}{4}$ " wicks.

No. 2. \$3.00 per dozen.

Body $2\frac{1}{2}$ " diam. x $1\frac{3}{4}$ " deep.Holds 4 ounces. Takes $\frac{1}{4}$ " wicks.

Glass Body, with Ground Neck fitted with (Ground) Glass Cap, making same air tight, and thus preventing evaporation.

No. 3. \$2.40 per dozen.

Height $3\frac{1}{4}$ ". Diam. 2".Takes $\frac{1}{4}$ " wicks.

No. 4. \$3.00 per dozen.

Height $3\frac{1}{2}$ ". Diam. $2\frac{1}{2}$ ".Takes $\frac{1}{4}$ " wicks.No. 5. Extra wicks $\frac{1}{4}$ " diam. 70c per grossNo. 6. Extra wicks $\frac{1}{4}$ " diam. 10c per dozen

Be sure to write your orders viz:—

$\frac{1}{2}$ doz. No. 1—334,
or 1 gross No. 5—335.



JEWELERS' ALCOHOL LAMPS.

These lamps are handsomely finished throughout

	Per Dozen.
No. 25, Polished Brass, 5 oz., 3 $\frac{3}{8}$ " diameter	\$ 7.50
No. 25B, Nickel Plated, 5 oz., 3 $\frac{3}{8}$ " diameter	10.00



COPPER PLATED STEEL LAMPS

	Per Dozen.
No. 20C, 5 oz., 3 $\frac{3}{8}$ " diameter, copper plated	\$ 6.00
No. 20 $\frac{1}{2}$ C, $\frac{1}{2}$ pint, 3 $\frac{3}{4}$ " diameter, copper plated	9.00
No. 21C, 1 pint, 4 $\frac{1}{8}$ " diameter, copper plated	12.00

LAMP WICKING
IN BALLS.

No. W.	50c per dozen.
No. V.	5c per ball.



LAFAYETTE PATTERN.

Substantially made of Heavy Tin.

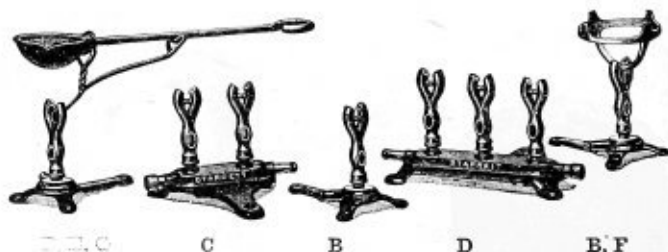
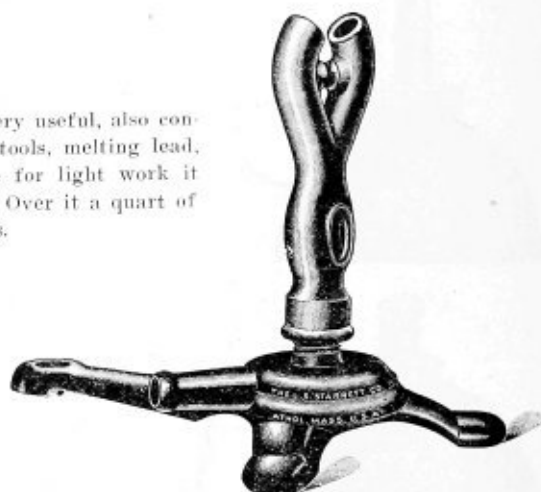
	Dozen.
No. Z. 2 $\frac{1}{2}$ "x3"	\$3.00
No. Y. 2 $\frac{7}{8}$ "x4"	3.60
No. X. 3"x5"	4.20

Always order by respective numbers and be sure to affix the page number, viz.:

$\frac{1}{4}$ doz. No. Y—335,
or $\frac{1}{2}$ doz. No. W—335.

TWIN GAS LAMP HEATER.

The heater will be found very useful, also convenient for tempering small tools, melting lead, babbitt, etc., and as a forge for light work it will be found very valuable. Over it a quart of water will boil in six minutes.



No.		Each
A	Burner only without base.....	\$0.75
B	One burner with base.....	1.00
C	Two burners " ".....	2.00
D	Three " " ".....	3.00
E	Tool holder only.....	.15
F	Dish holder.....	.25
G	Ladle only, 14 inches long, 12 ounces in weight.....	.25
H	One burner with base (B), with tool holder (E) and dish holder (F)...	1.40

When ordering goods from this catalog BE SURE to affix the page number to the item number, viz.: 1/2 Doz., No. D—336.

GAS LAMP HEATERS.



No. 1\$1.00 each
With Illuminating Tip.

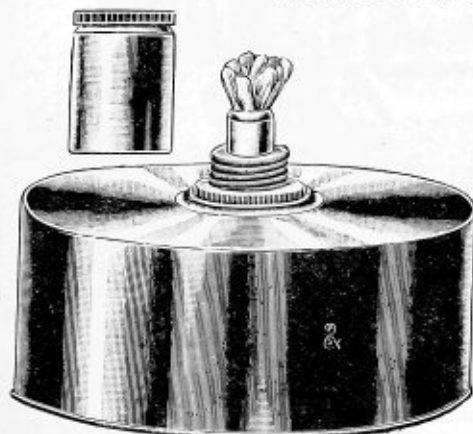


No. 2 \$1.25 each
With Bunsen Burner.

The above lamps have a hollow ring that swings on a hollow stud. A simple movement of the ring (by the finger) gives you, in the No. 1 style, a gas light flame or a large brush flame.

In the No. 2 style you can get a perfect Bunsen flame or a large brush flame. The base is 4" in diameter. Extreme height is 5".

STUDENT'S ALCOHOL LAMP.

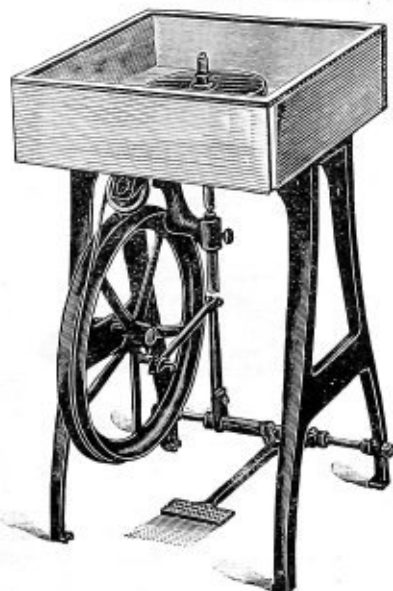


No. 3\$1.00 each

This lamp is made of spun brass, is nickel-plated throughout and is highly finished.

It is perfect in construction and will not leak.

LAPIDARY (FOOT-POWER) MACHINE



No. 10.

This machine is arranged for foot power. The Box is zinc lined. Size, 20"x24".

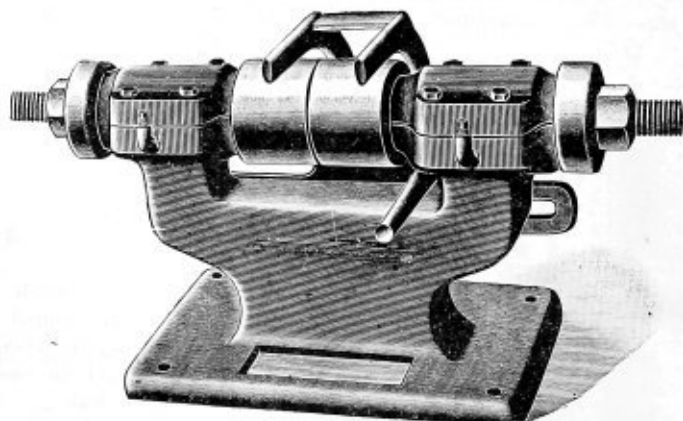
Price, including one 9" lead lap,

\$45 00

Can fit an electric motor to this machine if desired.

Price upon request.

POWER LAP HEAD.



No. 12 \$23 00 each.

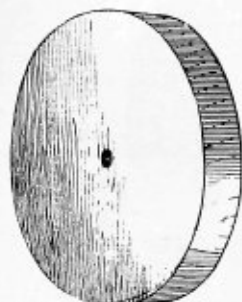
Length of spindle, flange to flange 14½". Flanges are 3" in diameter.

Bench to center of spindle 8".

This head is specially designed for Lapidists' use.

Order By Our New System.

METAL AND WOOD LAPS.



SQUARE
FACE
WOOD
LAPS.



WHITEWOOD
LAPS
USED FOR
SETTINGS.

Maple	Poplar	Willow	Diam.	Each
No. G	No. S	No. 1	3"	\$0.20
" H	" T	" 2	4"	.25
" J	" U	" 3	5"	.30
" K	" V	" 4	6"	.35
" L	" W	" 5	7"	.40
" M	" X	" 6	8"	.45
" P	" Y	" 7	9"	.50
" R	" Z	" 8	10"	.60

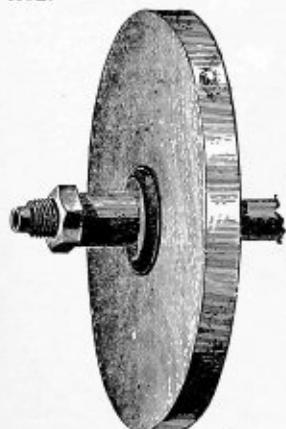
SECTIONAL VIEW.

Number	Diameter	Dozen
A	2½"	\$1.25
B	3 "	1.50
C	4 "	2.00
D	5 "	2.50
E	6 "	3.00

The substances used on Wood Laps are Oil and Vienna Lime, Rouge, Diamond-tine, Rotten Stone, Tripoli, Putty Powder, etc.

COPPER LAPS.

These are made to order only. Prices cheerfully given upon application.



METAL
LAPS,
\$1.00
PER
INCH
DIAM-
ETER.

BOXWOOD LAPS.

No. 11	Diam. 3"	Each \$0.40
" 12	" 4"	" .50
" 13	" 5"	" .60

CHARGING BLOCKS.

Agate Charging Block, 2" diameter by ¾" thick.

No. 14\$3.50 each

Iron Charging Block for coarse work.

No. 15\$0.50 each

Steel Charging Block, hardened for fine work.

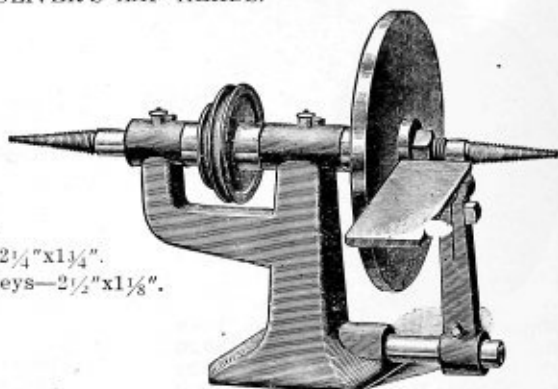
No. 16\$1.00 each

We make them from 6" to 12" diameter by ⅝" thick. In ordering, give exact size of spindle they are to fit. Remember, the price does not include the spindle shown in the cut or an arbor of any kind.

NOTE—We do not charge laps of any kind.

OLIVER'S LAP HEADS.

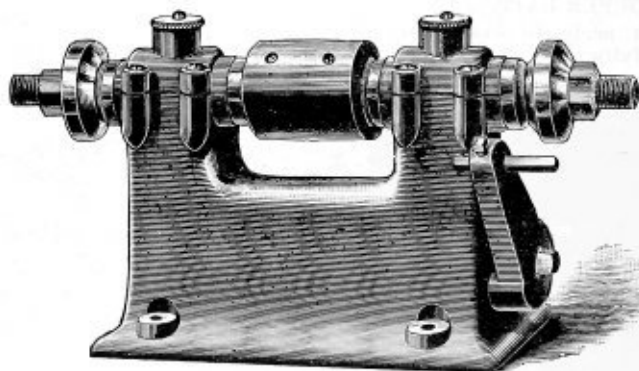
Length of spindle—18".
 Diameter of Spindle— $\frac{3}{4}$ ".
 Maximum lap capacity—8".
 Size of single flat pulley— $2\frac{1}{4}$ "x $1\frac{1}{4}$ ".
 Size of tight and loose pulleys— $2\frac{1}{2}$ "x $1\frac{1}{8}$ ".
 Weight—15 lbs.



- No. 3 —With cone pulley, as in cut (Gise)...Price, \$7 00
 No. 30 —With single flat pulley (Gith).....Price, 7 00
 No. 300 —With tight and loose pulleys (Glacis)..Price 8 00

The prices given are without lap.

The screw tip on the right is removable.

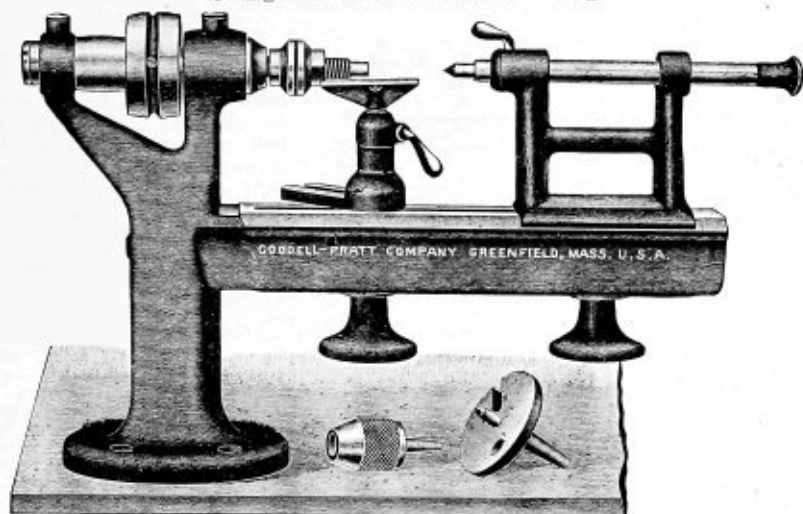


- No. 5—As in cut (Glebe). Price, \$16 00.
 Size of base—7"x12".
 Length of spindle—19".
 Diameter of spindle in boxes— $1\frac{3}{16}$ ".
 Diameter of spindle between flanges—1".
 Length of bearings— $3\frac{1}{2}$ ".
 Size of pulley—3"x $3\frac{1}{4}$ ".
 Maximum lap capacity—14".
 Net Weight—50 lbs.

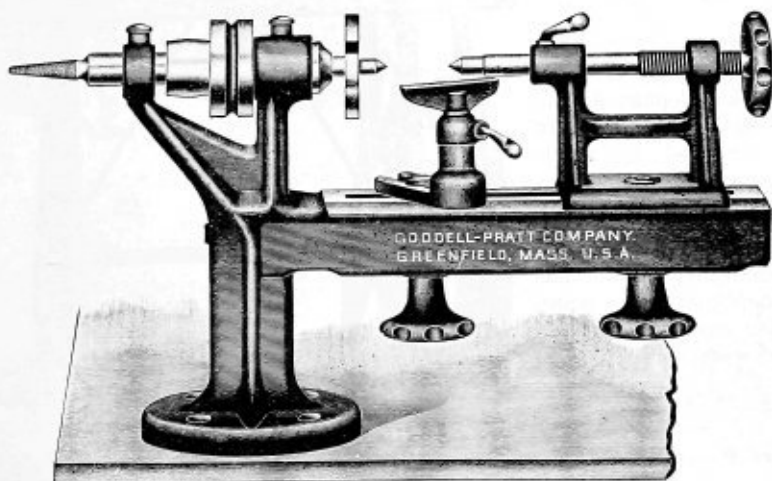
Use Care in Writing Orders and Avoid Error.

POLISHING LATHES.

Swings 5 Inches. Bed is 12" Long.



(No. 29) \$7 50

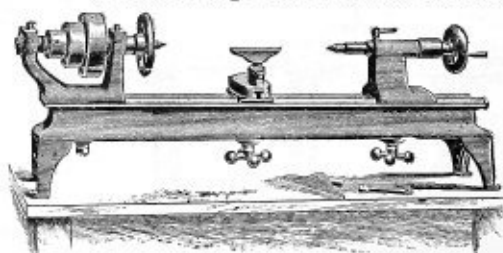


(No. 29 1/2) \$10 00

Above lathes are furnished complete with Tail Stock, Tee Rest, Face Plate, Saw Arbor, Taper Threaded Polishing Spindle, and Three-Jawed Chuck; capacity 0 to $\frac{5}{8}$ ".

BENCH SPEED LATHE.

8 Inch Swing. 3 Foot Bed. Distance between centers—20".



No. "A" \$25 00

Strong and accurate, with centers lining perfectly. The cone is turned inside as well as outside, and is for $1\frac{1}{4}$ " belt. There is a $\frac{1}{2}$ " hole through spindle, and this as well as the tail spindle is of steel; the latter has a self-discharging center.

Net Weight—80 lbs.

No. B Countershaft for this lathe.....	\$ 7 00
No. C Slide Rest for this lathe (See opposite page).....	12 00
No. D Set of 8 Tools for use in the Slide Rest.....	2 00

The Bench Speed Lathe mounted on a finely finished hardwood table.

Details See Above.

The Driving Wheel has ample weight, is well turned and balanced; the connecting shaft runs in our improved self-adjustable boxes, insuring perfect alignment.

Note.—Each lathe has one face plate, two pointed, and one each cup and spur centers, short and long T rests, wrench and belt.

Net Weight—225 lbs.

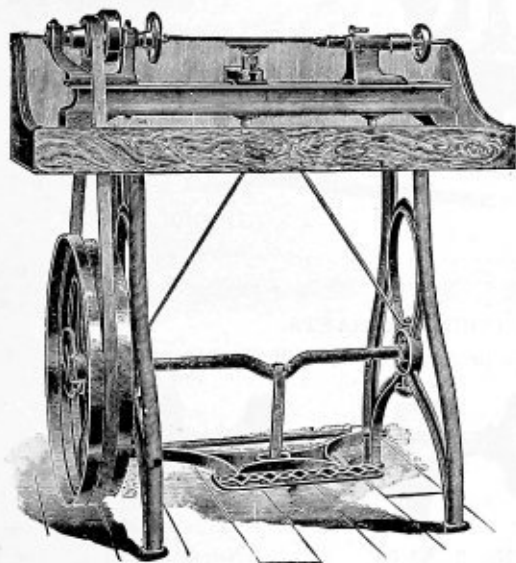


No. "E" \$45 00

Always order by respective number, viz.: 1 only "E"—342—by so doing neither of us can err.

JEWELERS' FOOT LATHE.

Swing, 8 Inches. Length of Bed, 3 Feet. Distance Between
Centers 20 Inches.



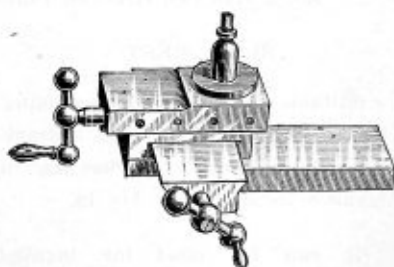
No. "G" \$50 00

SLIDE REST.

An exceedingly well-made tool, adapted to 8" swing hand or foot lathes. The longitudinal motion is 5", and the transverse motion $2\frac{3}{4}$ ".

Price (Hadder)—\$12 00

Weight boxed—13 lbs.



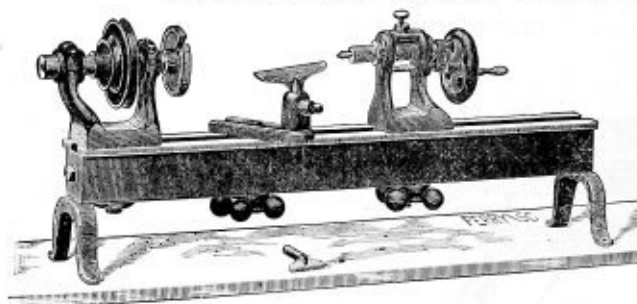
No. K 8" Slide Rest.

No. L Countershaft for this lathe.....	\$7 00
No. M Set of 8 Tools for use in Slide Rest.....	2 00

BENCH LATHE.

Swing $6\frac{1}{2}$ Inches.

24-inch Bed Takes 14 Inches Between Centres.
 36-inch Bed Takes 26 Inches Between Centres.



These Lathes are furnished with either a Round or Flat Driving (Belt) pulley.

Specify which you want, or we will send a grooved pulley for a Round Belt.

No. A	Price 24 inch Bed	\$12 00
No. B	Price 36 inch Bed	14 00

SMALL COUNTERSHAFTS.

For Running the Above Lathes or Any Other Small Machinery by Power.



No. 1 \$2 50



No. 2 \$2 00



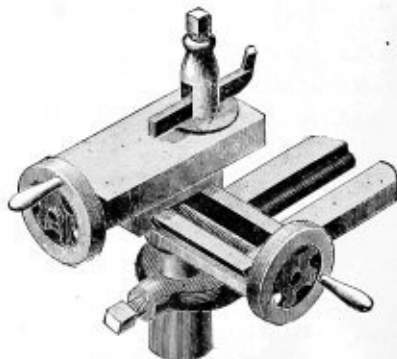
No. 3 \$2 00

No. 1 Has T & L Pulleys $3 \times 1\frac{1}{8}$ " Cone Pulley 5" and $3 \times 1\frac{1}{8}$ ".
 No. 2 Has T & L Pulleys $3 \times 1\frac{1}{8}$ " Cone Pulley 4" and 2" grooved.
 No. 3 Has two Grooved Pulleys 4" and 2". Both fast.

SLIDE REST.

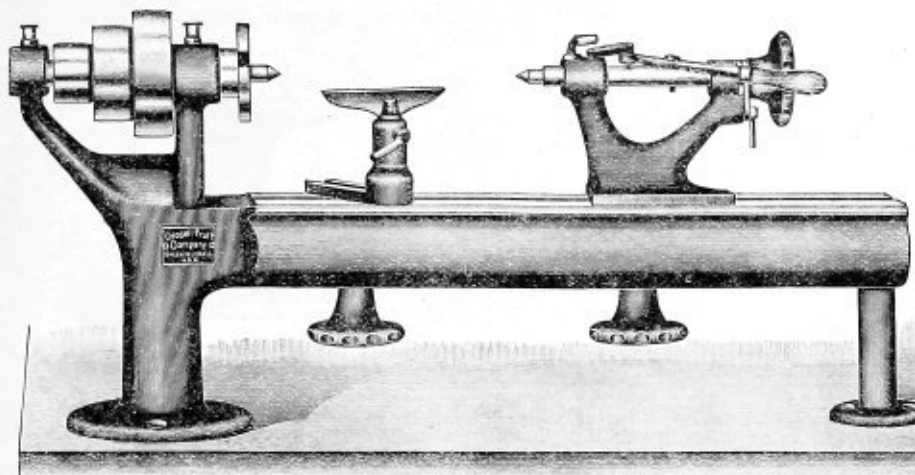
Suitable for any Lathe swinging from 6 to 8 inches, it has a longitudinal motion of 3 inches and a transverse motion of $1\frac{1}{2}$ in.

It can be used for turning straight or taper work, boring straight or taper holes, etc. Can be raised or lowered to suit different heights of centers.



No. "C"

AMATEUR BENCH LATHE.



Swing, 7 inches.

12 inches between centers.

No. "A" (Paddle).....\$20.00

This 24-inch Bench Lathe, with a 7-inch swing and 12 inches between centers, will be welcomed by a host of our customers who need a **Good Low Priced Lathe**.

The cut cannot fail to convey an excellent idea of its general characteristics. It is an Amateur Bench Lathe, and while all its construction and fitting is done with great care and reasonable accuracy, we do not pretend that it is possible to make a precision tool for the price at which we propose to sell this one. But we do know that there are innumerable uses for just such a machine.

It has a milled bed, hollow spindle, with $\frac{3}{8}$ -inch hole, and is provided with a No. 1 Morse Taper; it has both screw and lever feed in tail stock, and is furnished with the following equipment:

- 1 Three-Jawed Chuck, capacity 0 to $\frac{1}{4}$ inch.
- 1 Slotted Face Plate.
- 1 Saw Arbor.

It is well finished with machine enamel, all steel parts polished bright. Dimensions as follows:

- Total Length, 25 inches.
- Distance between Centers, 12 inches.
- Width of Belt Swing, 7 inches.
- Diameter of Pulley Steps, $1\frac{1}{2}$, $2\frac{1}{2}$, $3\frac{1}{2}$ inches.
- Hole through Spindle, $\frac{3}{8}$ inch.

Gross weight, 50 pounds. Net weight, 32 pounds.

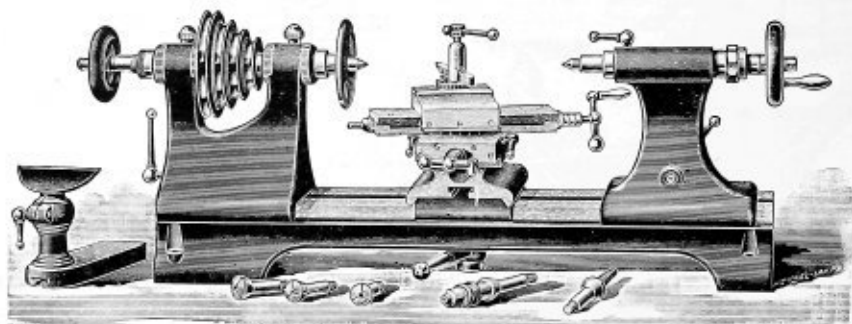
NOTE—No countershaft is furnished with this lathe.

Order this way, viz.:

1 only—"A"—345.

FINE TOOL MAKERS' BENCH LATHE.

Swing 8 Inches. $8\frac{1}{2}$ Inches Between Centres. Regular Length of Bed 18 Inches.



An accurate, serviceable and durable Lathe for Jewelers. Each individual part has been specially designed, as to the material used, proper size and shape to insure strength, perfect accuracy and durability, and at the same time adapted to the largest variety of work. Every mechanic understands that with a properly constructed tool, he is able to produce more perfect work.

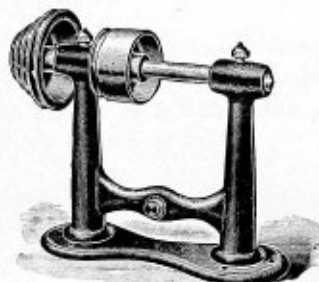
Hollow Spindle, Cone Bearings, Hardened and Ground.

No. 1 (Drill Rod) wire will go through head and spindle.

Slide Rest is Compound—Graduated.

No. A	Plain Lathe, with Head, Tail Stock, T Rest, 3 Wire Chucks, Saw Arbor and Brush Chuck.....	\$45 00
No. B	Slide Rest, complete	25 00
No. C	Countershaft, complete, with Cone Pulley and tight pulley for round or flat belt	8 00
No. D	Countershaft, complete, with Cone Pulley and 3" Tight and Loose Pulleys and Shifter.....	10 00
Beds longer than 18 inches made to order only. Add \$1.00 per inch above 18" Bed.		

COUNTERSHAFTS.



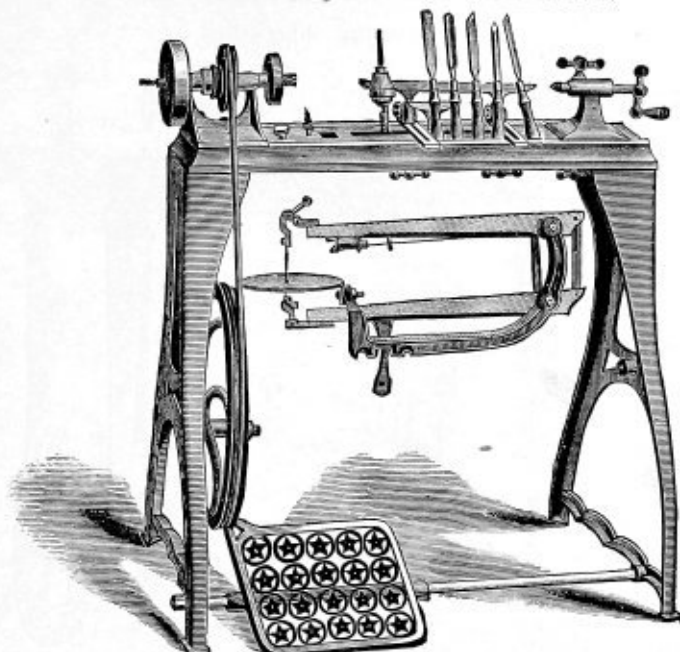
No. "C" \$8 00



No. D \$10 00

Do not fail to order by respective numbers, viz.: 1 only No. B—346.

GOODELL LATHE AND SAW ATTACHMENTS.



This Lathe is patterned almost exactly after the latest improved lathes now used in the best machine shops and pattern makers' rooms. The large drive wheel has two grooves of varying depths on its face, to give a change of speed, as the belt runs from it to the cone pulley on the lathe head. The lathe head is provided with a two-inch face plate a spur center, a screw center for turning cups, and also a very nice drill chuck to hold from 0 to 1-4 inch round twist drills for drilling wood or iron. It also has on the outer side of the pulley a $4\frac{1}{2} \times \frac{7}{8}$ inch emery wheel and a drill spindle, with chuck to hold drill points for wood drilling. The tail stock has a screw-feed center, which is secured at any point desired by a clamping arrangement like that on the modern engine lathes. It is also provided with a long and short tool rest, five turning tools, wrench, drill points, etc., etc. Swing of lathe, 5 inches. Length of bed, 24 inches. Distance between centers, $13\frac{1}{2}$ inches.

The Scroll Sawing Attachment as shown in the cut, is secured to the lathe bed by one bolt, and can be put on or off at pleasure. This attachment has all of the improvements found in any of our scroll saws.

The Circular Saw Attachment consists of a saw table 6x7 inches, a saw 3 inches in diameter, and a saw arbor. The Lathe rest socket is used to support the table.

This Lathe is thoroughly built and highly finished, the polished parts being nickel-plated. Weight, Lathe and Saw boxed, 78 lbs.

Price of Lathe and Lathe Tools\$10 00

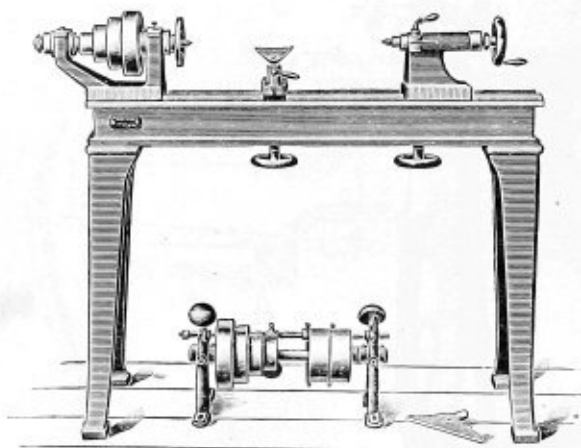
Price of Scroll Saw Attachment 1 50

Price of Circular Saw Attachment 1 00

In ordering please state whether either or both of the saw attachments are wanted.

SPEED LATHE.

11-Inch Swing. 4-Foot Bed.



Note.—This machine is being redesigned, which will improve it materially. Write for latest details and prices.

The following are the details of the original machine.

Head Stock—The spindle in the head is made from high carbon crucible steel, and has a $\frac{3}{16}$ " hole through it. The cone pulley is turned inside as well as out, insuring a perfectly balanced and true running head. The bronze bearings are of the best quality, heavy and well fitted.

Tail Stock—This is of the English or under cut design. Has self-discharging centers and quick adjusting locking device.

Wood Turning—We can furnish extras for wood turning as follows: Cup and spur centers, screw face plate, longer T rests, additional face plates and shelf on back side. These are at a special price.

Countershaft has tight and loose pulleys, 6" diameter for 2" belt, and should make 500 revolutions per minute.

In General these lathes are carefully built and finished in the best possible manner; for metal or pattern work use they equal the best.

Price with countershaft (Habit).

Swing—11".

Length of bed—4'.

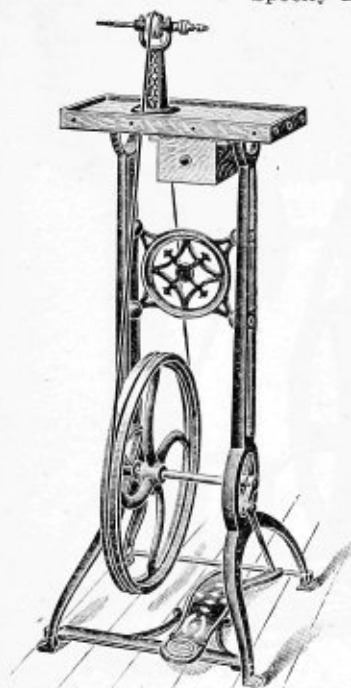
Distance between centers—30".

Net Weight—365 lbs.

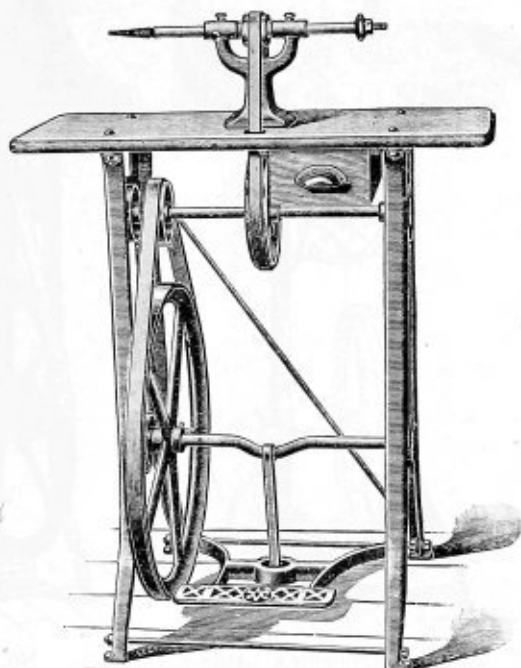
Gross Weight—Domestic Shipment, about 450 lbs.

POLISHING LATHES.

Specify Exactly What is Wanted.



No. 0
Polishing Lathe



No. 2a Flat Top
Polishing Lathe

No. 0
Polishing Lathe.

The table top, 9"x15", is of finely finished hardwood, with a raised edge, to keep articles from rolling off.

Price, with No. 0 head (Gallot), \$8 25.

Price, with No. 0C head, as in cut (Galt), \$8 50.

Net Weight, 50 lbs.

Gross Weight—Domestic Shipment, about 62 lbs.

No. 2a
Polishing Lathe.

Designed for light buffing and polishing required by gold and silver platers. It stands 38" high to top of table, which is 16"x34". The diameter of driving wheel is 24", and pulleys on the intermediate shaft are 5" and 8". The steel shafts run in self-adjusting babbitted boxes, making the alignment perfect.

Price, with No. 3A head (Gemel), \$20 00.

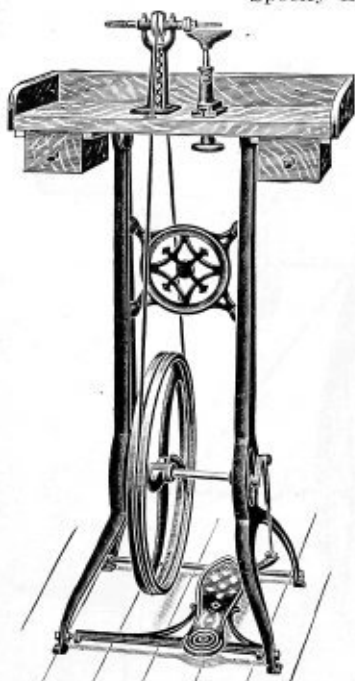
Net Weight—130 lbs.

Gross Weight—Domestic Shipment, about 150 lbs.

Always mention page number with the item number, viz.: 1 only No. 0—349.

POLISHING LATHES.

Specify Exactly What is Wanted.



No. 0A Polishing Lathe.



No. 2 Polishing Lathe

No. 0A
Polishing Lathe.

No. 2
Polishing Lathe.

The table top, 12"x22", is made of finely finished hardwood.

Price, with No. 0 head, as in cut (Gally), \$9 75.

Price, with No. 0C head (Galong), \$10 00.

Lathe without rest, \$0 50 less.

Net Weight, 55 lbs.

Net Weight—Domestic Shipment, about 72 lbs.

The driving-wheel, 24" in diameter, belts to a 5" pulley on the intermediate shaft, and from a 10" pulley on that shaft to the head.

Both shafts of steel run in self-adjusting babbitted boxes, making the alignment perfect.

The box top, 17"x30", is made of finely-finished hardwood, lined with heavy zinc.

Price, with No. 2 head (Gault), \$20 50.

Price, with No. 2C head (Gawby), \$22 00.

Price with No. 3 head, as in cut (Gawn), \$22 50.

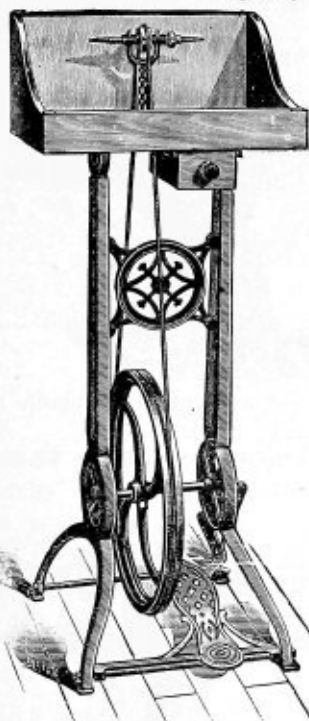
Net Weight—140 lbs.

Gross Weight—Domestic Shipment, about 160 lbs.

Be sure to specify the style of head wanted on the stand.

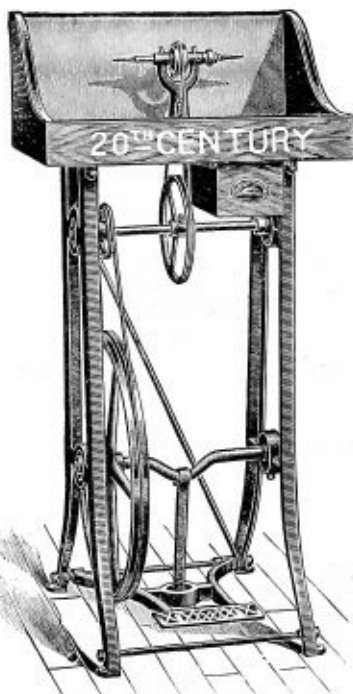
POLISHING LATHES.

Specify Exactly What is Wanted.



Special.

Special



20th Century No. 1.

The box top, 12"x18", is made of finely-finished hardwood, lined with heavy zinc.

Price, with No. 0 head, as in cut (Gammon), \$11 75.

Price, with No. 0C head (Gammon), \$12 00.

Net Weight—67 lbs.

Gross Weight—Domestic Shipment, about 80 lbs.

The driving-wheel, 21" in diameter, belts to a 4" pulley on intermediate shaft, and from an 8" pulley on that shaft to the head.

Both shafts of steel run in self-adjusting babbitted boxes, making the alignment perfect.

The box top, 15"x23", is made of finely-finished hardwood, lined with heavy zinc.

Price, with No. 1 head, as in cut (Ganza), \$16 00.

Price, with No. 1C head (Gardon), \$17 25.

Net Weight—90 lbs.

Gross Weight—Domestic Shipment, about 105 lbs.

20th Century
No. 1

Do not fail to specify what style of head you want mounted on this stand.

POLISHING HEADS.

Specify Exactly What is Wanted.



Height, 6"; with steel spindle 8" long and $\frac{3}{8}$ " diameter. Has dust proof oilers.

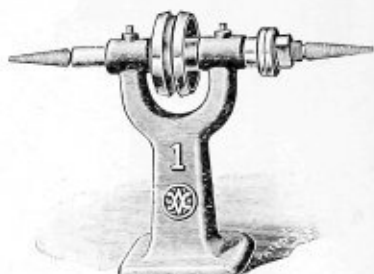
No. 0—(Ganch), \$1 25

Weight, $2\frac{1}{2}$ lbs.



Height, 6"; with steel spindle 8" long and $\frac{3}{8}$ " diameter. This head is fitted with a small steel chuck.

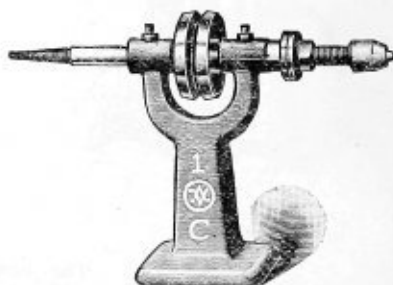
No. 0C—(Gangue), \$1 50.



Height, 6"; with steel spindle 10" long and $\frac{1}{2}$ " diameter.

No. 1—(Garons). Price, \$2 00.

Weight—4 lbs.



Height, 6"; with a ground steel spindle 10" long and $\frac{1}{2}$ " diameter. The widest space between the flanges is $\frac{5}{8}$ ". This head is fitted with our No. 1 Niagara Drill Chuck, which holds any size drill up to $\frac{3}{8}$ " diameter.

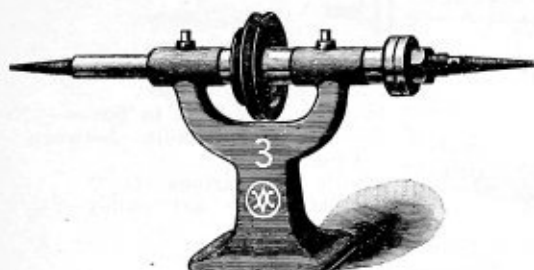
No. 1C—(Garth). Price, \$3 25

Never fail to affix the page number to the item number, viz.:

$\frac{1}{2}$ Doz. No. 0C—352.

POLISHING HEADS.

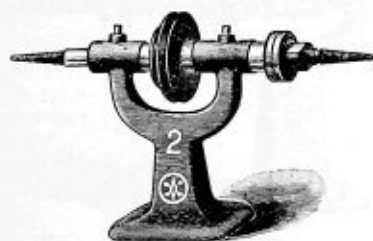
Specify Exactly What is Wanted.



Height to center of spindle—7".
 Length of spindle—18".
 Diameter of spindle— $\frac{3}{4}$ ".
 Extreme space between flanges— $\frac{1}{2}$ ".
 Length of bearings— $2\frac{1}{4}$ ".
 Size of single flat pulley— $2\frac{1}{4}$ "x $1\frac{3}{4}$ ".
 Size of tight and loose pulleys— $2\frac{1}{2}$ "x $1\frac{1}{8}$ ".
 Weight—10 lbs.

The screw tip on the right is removable.

- No. 3 —With cone pulley, as in cut (Genet).....Price, \$6 00
 No. 30 —With single flat pulley (Genie)Price, 6 00
 No. 300 —With tight and loose flat pulleys (Geode).....Price, 7 00



Height to center of spindle, 6";
 length of spindle, 13"; diameter of
 spindle between flanges, $\frac{5}{8}$ "; ex-
 treme space between flanges, $\frac{1}{2}$ ".

- No. 2 —With cone pulley, as in
 cut (Gazet).Price, \$4 00
 No. 20 —With single flat pulley
 (Gazon)Price, 4 00
 Weight—7 lbs.



Height to center of spindle, 6";
 length of spindle, 13"; diameter of
 spindle between flanges, $\frac{5}{8}$ "; ex-
 treme space between flanges, 1".

- This head is fitted with our No.
 2 Niagara Drill Chuck, which holds
 any size drill up to $\frac{1}{4}$ " diameter.
 No. 2C—With cone pulley, as in
 cut (Geck)..Price, \$5 50
 No. 20C—With single flat pulley
 (Glin)Price, \$5 50

Be sure to affix page number to item number.

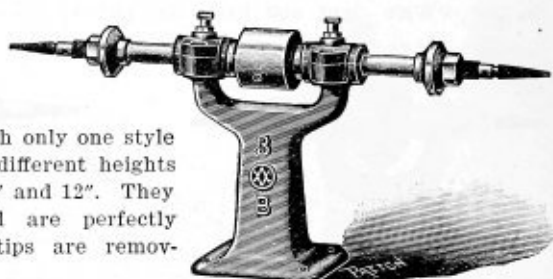
POLISHING HEADS.



Height to center of spindle—7".
 Length of spindle—20".
 Diameter of spindle in boxes— $\frac{3}{4}$ ".
 Diameter of spindle between flanges— $\frac{5}{8}$ ".
 Length of bearings— $2\frac{1}{4}$ ".
 Size of single flat pulley— $2\frac{1}{4}$ " x $1\frac{3}{4}$ ".
 Size of tight and loose pulleys— $2\frac{1}{2}$ " x $1\frac{1}{8}$ ".
 Extreme space between flanges— $\frac{3}{4}$ ".
 Weight—10 lbs.

No. 3A—With single flat pulley, as in cut (Gibbe).....Price, \$6 00

No. 13A—With tight and loose pulleys (Gunbal).....Price, 7 00



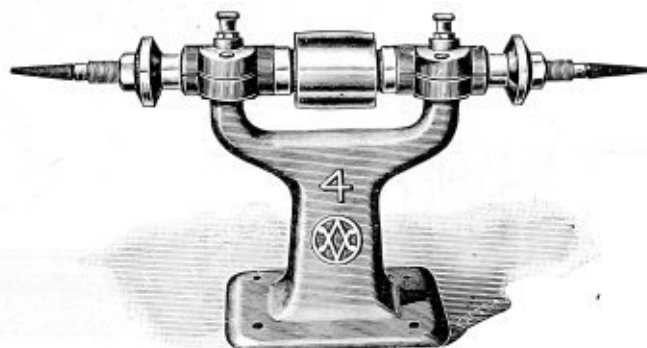
These heads are built with only one style of spindle but with three different heights to center of spindle: 8X, 10" and 12". They have babbitted boxes and are perfectly constructed. The screw tips are removable.

Size of base, 6"x6"; length of spindle, 22"; diameter of spindle in boxes, $\frac{3}{4}$ "; diameter of spindle between flanges, $\frac{5}{8}$ "; extreme space between flanges, $\frac{3}{4}$ "; length of bearings $2\frac{1}{4}$ "; size of tight and loose pulleys, $2\frac{1}{4}$ " x $1\frac{1}{2}$ "; size of single flat pulley, $2\frac{1}{4}$ " x 2".

Height	Single Flat Pulley	Tight and Loose Pulleys
No. 3B—8" (Gild).....	\$ 8 00	(Gyves)\$ 9 00
No. 23B—10" (Gimp)	9 00	(Gyrate)..... 10 00
No. 43B—12" (Gin)	10 00	(Gusset)..... 11 00

Always affix page number to the item number, viz.: 1 only No. 23B—354.

POLISHING HEADS.



This line of heads is adapted for heavy buffing. They have babbitted boxes, and are built with four styles of spindles, designated A, B, C, D, as illustrated on page 93.

The screw tips are removable.

Size of base, 7"x8"; height of center of spindle 9"; length of A and B spindles with a screw tip at each end, 23"; length of C and D spindles with a screw tip at one end only, 27"; diameter of spindle in boxes, $\frac{1}{8}$ "; diameter of spindle between flanges $\frac{3}{4}$ "; extreme space between flanges, 1"; length of bearings 3"; size of single flat pulley, $2\frac{3}{4}$ "x $2\frac{3}{4}$ "; size of tight and loose pulleys, $2\frac{3}{4}$ "x2".

No. 4.	With A Spindle (Ginger)	Price, \$12 00
No. 4.	With B Spindle (Gipsy)	Price, 14 00
No. 4.	With C Spindle (Grist)	Price, 12 00
No. 4.	With D Spindle (Groats)	Price, 14 00

* Net Weight, about 30 lbs.



Styles
A and C

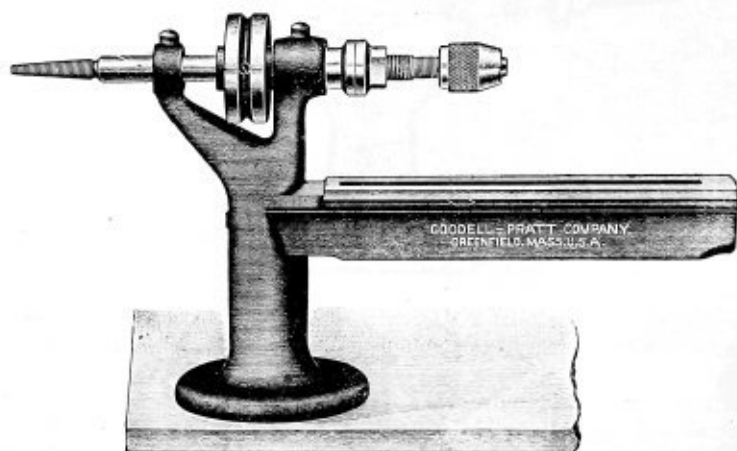


B and D

Note—C and D have Screw Lip on one end only.

POLISHING HEAD.

No. 28.



This style of base will at once be appreciated as it enables the operator to greatly increase the usefulness of his machine by adjusting any jigs or attachments he may desire for doing his own particular class of work.

This machine is fitted with a $\frac{1}{2}$ -inch Spindle, and will take a wheel $\frac{7}{8}$ inch by 4 inches. The Pulley is $2\frac{1}{4}$ inches; Chuck, Three-Jawed, capacity 0 to $\frac{1}{4}$ inch; base is japanned.

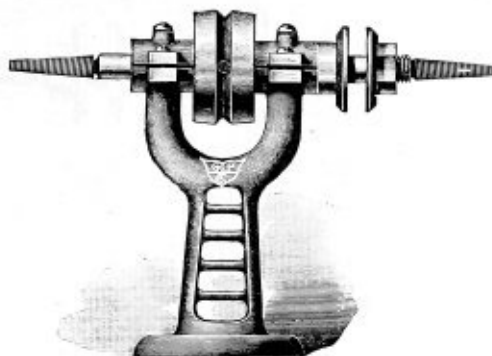
No. 28. Price, each (Manse)\$4 50

Packed one in a box, 13x8x $\frac{1}{4}$ inches.

Weight, 8 $\frac{1}{2}$ pounds.

When writing your order do not fail to affix the page number to the item number viz.: 1 only No. 28—356.

POLISHING HEADS.

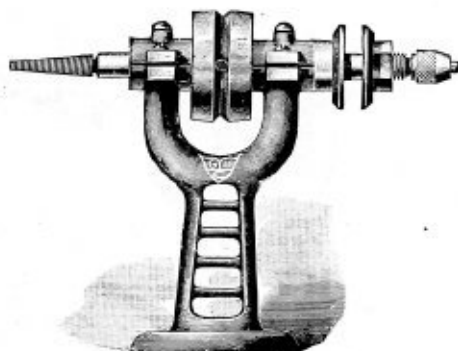


No. "A" \$1 50

Frame 6 inches in height; Steel Spindle $\frac{3}{8}$ inch in diameter and 8 inches long. The Boxes are adjustable; Screws and Caps are of brass, and it is finished in japan. The Taper Screws on each end are carefully threaded. The distance between the flanges admits of placing therein a wheel $\frac{1}{4}$ inch in thickness. The pulley is grooved for a $\frac{1}{4}$ -inch round belt and is $1\frac{7}{8}$ inches in diameter, $\frac{3}{4}$ -inch face.

Weight, 3 pounds.

Each packed in a box, $9\frac{1}{2} \times 7\frac{1}{4} \times 3$ inches.



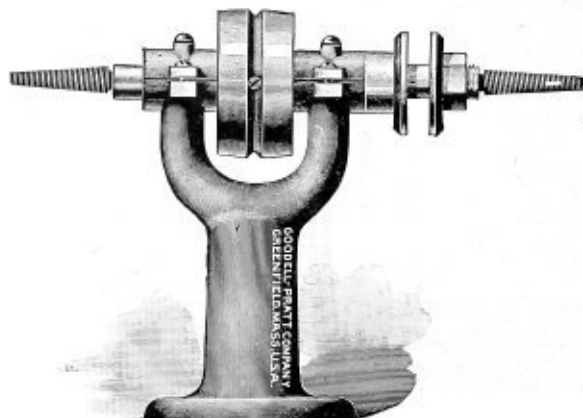
No. "B" \$2 50

Fitted with a Three-Jawed Chuck, capacity 0 to $\frac{5}{8}$ inch.

Details Same as Above.

Always affix page number to item number, viz.: 1 only No. B—357.

POLISHING HEAD.

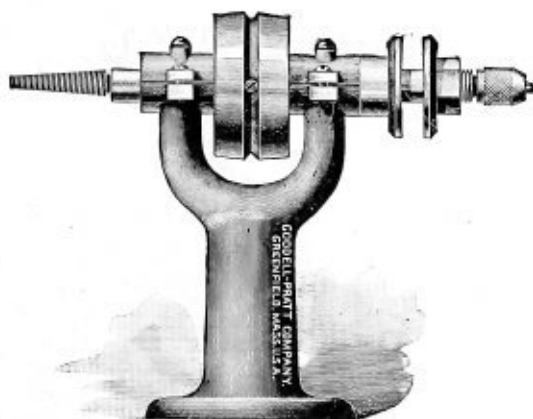


No. "C" \$2 50

Slightly more than 6 inches in height, and is fitted with a $\frac{1}{2}$ -inch Spindle, 10 inches in length. The Boxes are adjustable; Screws and Caps are of brass. The distance between the flanges admits of taking in a wheel $\frac{7}{8}$ inch thick. The Taper Threads upon each end are carefully cut. The diameter of the Pulley is $2\frac{1}{4}$ inches, $\frac{7}{8}$ -inch face, and it is grooved to take a $\frac{1}{4}$ -inch round belt.

Weight, $4\frac{3}{4}$ pounds.

Each packed in a box, $12 \times 7\frac{3}{4} \times 3\frac{3}{4}$ inches.



No. D \$4 00

Fitted with a Three-Jawed Chuck, capacity 0 to $\frac{1}{4}$ inch.

Always affix page number to item number when ordering, viz.: 1 only D—358. It saves time and is a very simple method.

8-INCH POLISHING HEAD

With Jewelers' Spindle.



This machine is adapted for all kinds of light Polishing, but especially for jeweler's work. It is designed to run small wire or buff wheels and is furnished with either single or tight and loose pulleys.

Extreme length of Spindle, 20".

PRICE OF HEAD AND SPINDLE.

With Single Pulley 2" diameter x $1\frac{1}{16}$ " face.....	\$10 00
With Tight and Loose Pulleys, 2" diameter x $1\frac{1}{16}$ " face....	11 50
Column for same	7 50
8" Countershaft	7 50

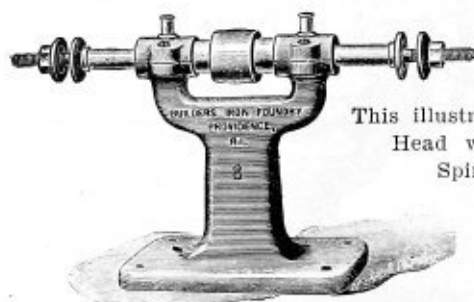
Note—We can supply on special order a 12" Head—of the same type and design as that shown above—for Jewelers' and Silversmiths' use.

Extreme length of Spindle.....	42"
Base to center of Spindle.....	12"
Diameter of Spindle.....	$1\frac{1}{4}$ "

		Diameter	Face	Price
No. A	With Single Pulley,	$4\frac{1}{2}$ "	x $4\frac{1}{4}$ "	\$30 00
No. B	With S. & L. Pulley,	$4\frac{1}{2}$ "	x $3\frac{1}{4}$ "	32 00
No. C	With Cone Pulley	4" & 5"	x $3\frac{1}{4}$ "	34 00

Don't fail to affix page number to the item number when ordering, viz.:
1 only B—359.

8-INCH POLISHING HEAD.



This illustration shows
Head with "B"
Spindle.

HEAD ONLY AS SHOWN.

Prices.	{ No. A. With A Spindle, \$10 00	No. D. With D Spindle, \$11 50
	{ No. B. With B Spindle 10 00	No. E. With E Spindle, 11 50

Note. { Unless otherwise ordered Heads are shipped with
B spindles. (See illustration above.)

Column. { Height $33\frac{1}{2}$ ". Base 13×16 ".
Weight, ready for shipment, about.....75 lbs.
Price \$7 50

Countershaft. { An 8" patent countershaft is furnished with this
machine when desired.
Weight, ready for shipment, about.....45 lbs.
No. G. Price, each \$7 50

Dimensions
of Head
in Detail. { Base $6\frac{1}{2} \times 9$ "
Diameter of Spindle in boxes $\frac{3}{4}$ "
Diameter of Spindle between flanges $\frac{1}{2}$ "
Length of Bearings $2\frac{1}{4}$ "
Height from base to centre of Spindle 8"
Length of Spindle 18"
Distance between wheels 13"
Single Pulley 2" diameter, $1\frac{3}{16}$ " face
Tight and Loose Pulleys 2" diameter, $1\frac{3}{16}$ " face

Weight, ready for shipment, about 25 lbs.

Always mention page number with item number and we can't make a mistake, viz.: 1 only "A" Head—360.

10-INCH POLISHING HEAD.



HEAD ONLY AS SHOWN.

Prices	No. B. With B Spindle, \$17 00	No. E. With E Spindle, \$19 00
	No. C. With C Spindle, 19 00	No. F. With F Spindle, 22 00

Note. { Unless otherwise ordered, Heads are shipped with B Spindles having a taper point which can be screwed into one end only.

Column. { Height 30½". Base 14"x18".
Weight, ready for shipment, about 85 lbs.
Price \$9 50

Countershaft. { A 10" patent Countershaft is furnished with this machine when desired.
Weight, ready for shipment, about 55 lbs.
No. "G." Price, each \$9 50

Dimensions of Head in Detail. { Base 8"x12"
Height from base to centre of Spindle 10"
Diameter of Spindles in boxes 1"
Diameter of Spindles between flanges ¾"
Single or Tight and Loose Pulleys, 3" diam., 2¼"
Length of Spindle 24"
Distance between wheels 17½"
Length of Bearings 3¼"

Weight, ready for shipment, about 45 lbs.

STEEL SPINDLES.

Used With Polishing Heads.

Shown on pages 360, 361, 363.



A



B



C



D



E



F



G



H



I



With 8" Head.

Spindle.	Pulley.
A \$10 00	Single
B 10 00	Single
D 11 50	Tight and Loose
E 11 50	Tight and Loose

With 10" Head.

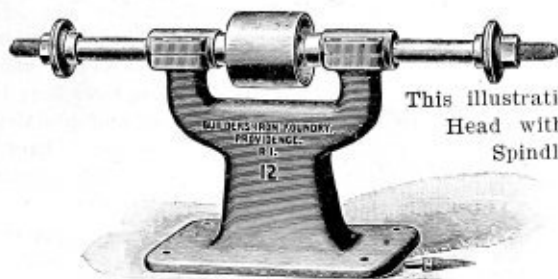
B \$17 00	Single
C 19 00	Single
E 19 00	Tight and Loose
F 22 00	Tight and Loose

With 12" Head.

B \$22 00	Single
C 24 00	Single
E 24 00	Tight and Loose
F 26 50	Tight and Loose
H 26 50	Cone
I 29 00	Cone

Note—When ordering do not fail to specify Size of Head and Style of Spindle.

12-INCH POLISHING HEAD.



This illustration shows
Head with "B"
Spindle.

HEAD ONLY AS SHOWN.

Prices.	No. B. With B Spindle, \$22 00	No. F. With F Spindle, \$26 50
	No. C. With C Spindle, 24 00	No. H. With H Spindle, 26 50
	No. E. With E Spindle, 24 00	No. I. With I Spindle, 29 00

Note.

Unless otherwise ordered, Heads are shipped with B spindles, having a taper point which can be screwed into end.

Column.

Height 27½". Base 16"x21".

Weight, ready for shipment, about125 lbs.
Price \$11 50

Countershaft.

Drop of Hangers 8"
Driving Pulley14" diam. ¾" face
Tight and Loose Pulleys7" diam., ¾" face
Weight, about 130 lbs.
No. J Price, with Single Pulley \$14 00
No. K. Price, with Cone Pulley 16 00

Dimensions
of Head
in Detail.

Base 9½"x15"
Height from base to centre of Spindle 12"
Diameter of Spindle in boxes 1¼"
Diameter of Spindle between flanges 1"
Length of Spindle 36"
Distance between wheels 26½"
Length of Bearings 4¼"
Single Pulley4½" diam., ¼" face
Tight and Loose Pulleys4½" diam., ¾" face
Cone Pulley4" and 5" diam., ¾" face
Weight, ready for shipment, about 90 lbs.

Be sure to affix page number to the item number, viz.: 1 only "H"—363.

POLISHING HEADS.



These machines are constructed after ideas that have been tested by years of practical operation and have proved the most serviceable, running for years without repairs.

The bearings are longer than those of the ordinary type of polishing head and are of our latest improved self-oiling style, which reduces the wear to almost nothing while insuring a steady machine well oiled at all times.

The bodies of the machines are heavy and the weight so distributed as to obtain the greatest rigidity and strength.

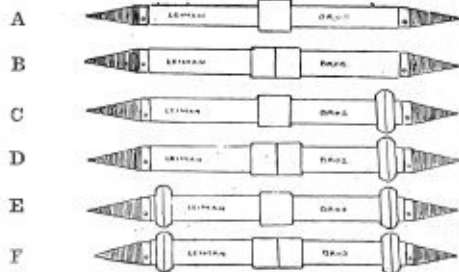
The spindles are of special spindle steel, accurately turned and fitted and are furnished in standard styles as shown below. A belt shifter is furnished with styles B, D and F spindles.

The covered type head insures safety to the operator, while cleanliness is evidenced to a marked degree when they are used. They are therefore to be preferred to open type machines.

Height of center of spindle.....	8 in.
Diameter of spindle.....	$\frac{3}{4}$ in.
Diameter of spindle between flanges....	$\frac{3}{4}$ in.
Space between flanges.....	$\frac{3}{4}$ in.

Bearings, double ring, self-oiling. Taper points removable.

Styles
of spindles



No.		
A1	20 in.....	\$18.00
A2	24 ".....	18.25
A3	28 ".....	18.50
B1	20 ".....	19.00
B2	24 ".....	19.25
B3	28 ".....	19.50
C1	20 ".....	20.00
C2	24 ".....	20.25
C3	28 ".....	20.50
D1	20 ".....	All of these prices upon application.
D2	24 ".....	
D3	28 ".....	
E1	20 ".....	
E2	24 ".....	
F1	20 ".....	
F2	24 ".....	
F3	28 ".....	

GREATEST LATHE IN THE MARKET.

Patented.



No. 16 LATHE. (Code Word, Sontuoso.)

No. 16. Price with combination, Spindles, \$40 00

Length, with R. & L. Cone, 50 inches x $1\frac{1}{4}$ inches diameter.Driving Pulley, T. & L., $2\frac{1}{2}$ inches diameter x 3 inches face.

Speed, from 3,000 to 4,000 revolutions per minute.

Bench Space, 16x17 inches. Height, 17 inches. Net Weight, about 160 lbs.



No. 16A LATHE. (Code Word, Sonuerat.)

No. 16A. Price with one Spindle, \$35 00

Length of Shaft, including Cone, $34\frac{1}{2}$ inches x $1\frac{1}{4}$ inches diameter.Driving Pulley, T. & L., $2\frac{1}{2}$ inches diameter x 3 inches face.

Bench Space, 16x17 inches. Height, 17 inches. Net Weight, about 155 lbs.

DO NOT FAIL to affix the page number to the item number. It saves time and avoids error.

OLIVER'S JEWELERS' MOTOR HEADS FOR DIRECT CURRENT.

Each head is carefully tested and is guaranteed to develop the full horse power as given.

The commutators, a vital part of the motor, are made of hard bar copper (not cast stock), and are thoroughly insulated.

The carbon brushes are of the best quality, and can be easily removed for inspection or renewal.

Tapered Points Are Removable.



No. 1. Type "A."
1-5 Horse Power.

110 Volts (Ides). \$32 00

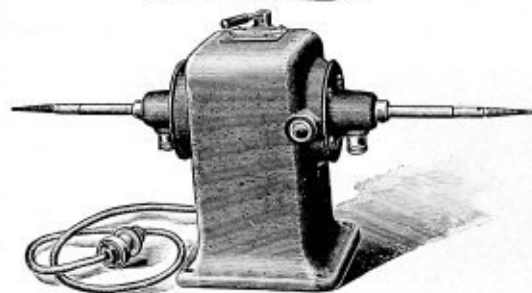
220 Volts (Idiom). 36 00

Height to center of Spindle, 5".

Length of Spindle, including two Brush Chucks, 20".

Approximate speeds, 2,000 and 3,000 revolutions per minute.

Net weight, 45 lbs.



No. 2. Type "A."
1/4 Horse Power.

110 Volts (Ibex). \$48 00

220 Volts (Ibis). 53 00

Height to center of Spindle, 8".

Length of Spindle including two Brush Chucks, 24".

Approximate speed, 3,000 revolutions per minute.

Net weight, 60 lbs.



No. 3. Type "B."
1/2 Horse Power.

110 Volts (Isagon). \$70 00

220 Volts (Iterate). 75 00

Height to center of Spindle, 8".

Length of Spindle, including two Brush Chucks, 36".

Approximate speed, 3,000 revolutions per minute.

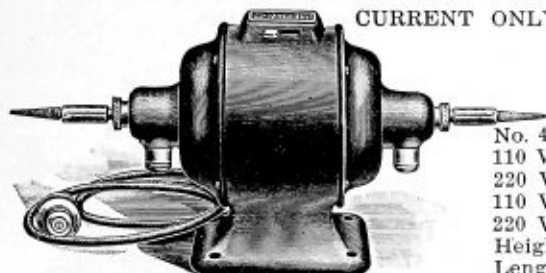
Net weight, 160 lbs.

The Type "B" motors are of an exceptionally sturdy design, fulfilling the requirements of manufacturing jewelers, silversmiths, hotels, etc. They have ample power for use with cotton buffs up to eight inches in diameter.

A starting rheostat with a dead line release is furnished with this motor.

Do not fail in writing to affix page number to the item number, viz.: 1 only No. 2-366.

OLIVER'S JEWELERS' MOTOR HEADS FOR ALTERNATING CURRENT ONLY.



No. 4. Type "K." 1-6 Horse Power.
 110 Volts 60 cycles (Idly). \$46 00
 220 Volts 60 cycles (Idly). 48 00
 110 Volts 133 cycles (Inert). 46 00
 220 Volts 133 cycles (Infuse). 48 00
 Height to center of Spindle, 5".
 Length of Spindle, including two
 Brush Chucks, 20".

Approximate speed, 3,400 revolutions per minute. Net weight, 37 lbs.

This is an induction motor having no brushes or commutator to require your attention.

DENTAL MOTOR HEADS FOR DIRECT CURRENT ONLY.

No. 5. Type "A."
 1-6 Horse Power.

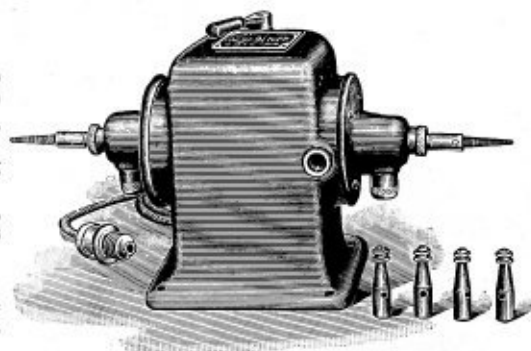
110 Volts (Ichor). \$39 00
 220 Volts (Ideal). 43 00
 Height to center of Spindle,
 5".

Length of Spindle, including
 two Brush Chucks, 20".

Approximate speeds, 1,000,
 1,500, 2,000, 2,500 revolutions
 per minute.

Net weight, 45 lbs.

Two Brush Chucks and 4
 wheel chucks come with
 these heads.



EMERY WHEEL CHUCK.

Right $\frac{3}{8}$ -inch Emery Wheel Chuck,
 $\frac{1}{4}$ H. P. Motor\$1 00 Each
 Right $\frac{5}{8}$ -inch Metal Lap Chuck, $\frac{1}{4}$
 H. P. Motor\$1 50 Each



WHEEL CHUCK.

Right $\frac{1}{8}$ -inch spindle...\$1 00 each
 Right $\frac{1}{4}$ -inch spindle... 1 00 each
 Right $\frac{3}{8}$ -inch spindle... 1 00 each
 Right $\frac{5}{8}$ -inch spindle... 1 00 each



Left Plain Grooved Pulley, for direct current motors.....\$1 00
 Grooved Clutch Pulley, for alternating current motors..... 4 00

The Bearings of all Oliver's motors are large and carefully made. They are automatically supplied with oil circulating by a wick feed, giving perfect lubrication.

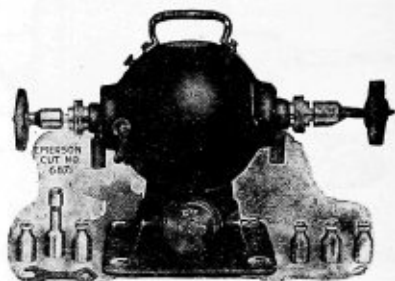
Always mention page number.

DIRECT CURRENT LABORATORY LATHES.

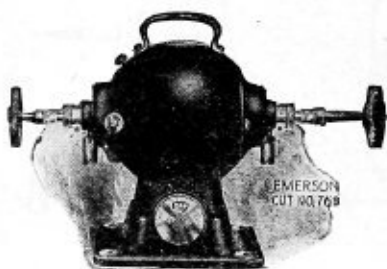
FITTED WITH "RITTER PATENTED"
CHUCKS.

Specifications:

One-tenth horsepower enclosed motor.
Shaft extended each end, ground and tapered.
Eight "Ritter Patented" Chucks, with wrench.
Brush wheel and grinding wheel.
Motor finished in black japan.



No.	Volts	Approx.	Approx. Watts		Type	Weight		List Price
		R.P.M.	No Load	Full Load		Net	Boxed	
A	110	*3000	35	135	422 CC	28	42	\$36 00
B	220	"	40	140	422 CC	28	42	36 00



FITTED WITH "VICTOR" CHUCKS.

Specifications:

One-tenth horsepower enclosed motor.
Ground shaft, extended and threaded, each end.
Two Victor threaded Chucks.
Brush wheel and grinding wheel.
Motor finished in black japan.

No.	Volts	Approx.	Approx. Watts		Type	Weight		List Price
		R.P.M.	No Load	Full Load		Net	Boxed	
C	110	*3000	35	135	422 EF	28	42	\$30 00
D	220	"	40	140	422 EF	28	42	30 00

*These lathes have three speeds, approximately 1500, 2200 and 3000 r. p. m.
Base 7x7 in. Height 10 1/4 in. Length over all, 16 in.
Data correct when issued, but subject to change.

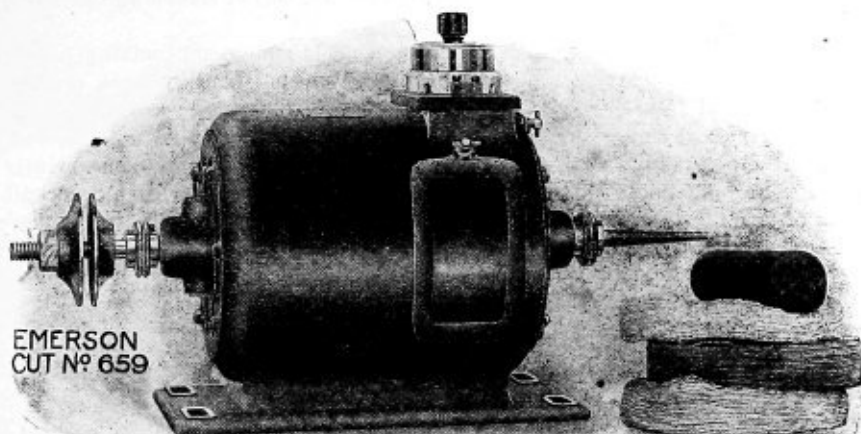
Always order by respective number to avoid error.

Viz.: 1 No. B—368.

Always affix page number.

ELECTRIC BUFFING LATHES.

For Alternating and Direct Currents.

EMERSON
CUT No 659

Buffing Lathes complete with extended shaft, collars and nut at one end, coarse taper thread at other end; with switch, bearing caps, 3 sample buffs, 1 lb. rouge and wrench.

Length over shaft 19 inches. Height 11 inches. Base 7x11 inches. Shaft extends 5 inches beyond motor body at each end.

Motors for direct current have 3 speeds (1800, 2400 and 3400 r. p. m.), but speed of alternating current lathes cannot be varied or changed.

Note.—Full load wattage required only when actually working with the lathe.

No.	Cycles	Alter- nations	Voltage	H.P.	Approx. Watts				List Price
					Approx. R.P.M.	No Load	Full Load	Net	
E	25	3000	104/115	1/6	1450	90	250	55	\$63.00
G	30	3600	"	1/6	1750	90	250	55	63.00
H	40	4800	"	1/5	2300	85	300	55	63.00
J	50	6000	"	1/4	2900	85	325	55	57.00
*K	60	7200	"	1/4	3400	80	310	55	57.00
L	133	16000	100/110	1/4	3700	85	325	55	57.00
*M	Direct Current		110	1/4	3400	75	280	60	52.50
N	"	"	220	1/4	3400	75	280	60	52.50

Items marked with asterisk () carried in stock.

Always mention page number. It will be a great help in filling orders.

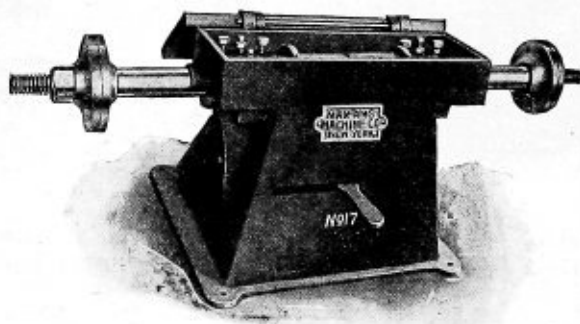
Viz.: 1 only No. G—369.

POLISHING, BOBBING AND GRINDING LATHES

These Lathes are very simple in construction, are thrust ringed and grooved, hence shaft cannot shift.

They also have wide bearings with oiling rings run in oil, making a self-oiler. Are easy running at high speeds. Stand strain of heavy work readily. Have hard steel spindles.

Driving pulleys and bearings are incased. The belting, while not exposed, is, nevertheless, readily controlled by means of protruding shifter, consequently bearings are practically dust-proof. These machines are serviceable for all kinds of work in the precious and other metal—glassware and kindred industries—where polishing, sand bobbing or grinding is required.



No. 17 Lathe.

Code Word SONTIES.

SPECIFICATIONS:

Price, with Double Spindle.....\$55 00

Length, with R. & L., Shaft Ends, 45 inches x $1\frac{1}{4}$ inches diameter.

Driving Pulley T. & L., 4 inches diameter x $4\frac{1}{4}$ inches face.

Speed about 3,000 R. P. M.

Height, 17 inches.

Bench Space, 21x21 inches.

Net Weight, about 325 pounds.

No. 7 POLISHING LATHE.



If desired for bench work, this lathe is mounted on a bench column. Height from base to center of spindle, 12".

COUNTERSHAFT.

The countershaft made for use with this lathe has tight and loose pulleys 9"x4¼", single driving pulley 18"x4¼". When furnished with cone pulley, 17" and 18"x4¼".

WEIGHTS.

Lathe and countershaft.....	520 lbs.
Lathe only.....	350 "
Countershaft only.....	170 "
Lathe on bench column.....	180 "

PRICE.

No.		Each
1.	Lathe with "B" spindle on floor column and countershaft. (Cashier)	\$65.00
2.	" " "E" " " " " without c'shaft.. (Cashew)	54.00
3.	" " "H" " " " " and countershaft.. (Casino)	75.00
4.	" " "B" " on bench column and countershaft. (Casern)	50.00
5.	" " "E" " " " " without c'shaft (Caseknife)	40.00
6.	" " "H" " " " " and c'ntershaft. (Casement)	59.00
7.	Countershaft only with single pulley..... (Factor)	18.00
8.	" " " " cone " (Fade)	20.00
9.	Spindle fitted with taper point on left hand..... (Camol)	2.00
10.	Extra taper points each..... (Camolly)	.75
11.	Small arbor with nut and flanges..... (Camolet)	2.50

Order by respective numbers and be sure to affix page number, viz.:

- 1 only No. 2—371.
1 only No. 7—371.

This method is most simple and positively avoids error.

NEW PROJECTING POLISHING LATHE.

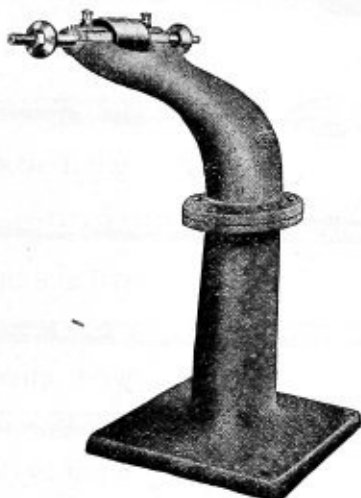
Designed to meet the demand for a very rigid projecting lathe. The overhang allows the handling of large pieces.

It can be furnished mounted on column, as shown, or, if desired for bench work, without column.

The spindle is of steel turned and ground and runs in long babbitted bearings. It can be furnished with single, tight and loose, or cone pulley.

DIMENSIONS.

Size of base.....	10"x16½"
Height from base to center of spindle	15½"
Diameter of spindle in bearings.....	1¼"
Diameter of spindle between flanges	1 "
Length of spindle.....	36 "
Length of bearings.....	5½"
Projection (center of spindle beyond center of base).....	15½"
Height from base of column to center of spindle.....	38 "
Size of tight and loose pulleys..	4½"x3¼"



WEIGHTS.

Lathe on column.....	375 lbs.
Lathe, head only.....	175 "
Column only.....	200 "

PRICES.

No. 1. Lathe with single pulley.....	(Head)	\$33.00
" 2. Lathe with tight and loose pulleys.....	(Headache)	35.00
" 3. Lathe with cone pulley.....	(Header)	38.00
" 4. Column only.....	(Heading)	16.50
" 5. Countershaft only.....	(Faction)	15.00

Write your order this way, viz.:

1 only No. 2—373.


1 only No. 4—373.

METAL SPINNER LATHE TOOLS.

WITH EGG SHAPED END.

	No.	Diam.	Long.	Each.
	1	1 1/4"	1 1/2"	\$1.50
	2	1 1/2"	2 "	2.00
	3	1 3/4"	2 1/4"	2.50

WITH DOUBLE CONE END.

	No.	Diam.	Long.	Each.
	4	1 1/4"	2 "	\$1.75
	5	1 5/8"	2 1/2"	2.50

WITH SPOON SHAPED END.

	No.	Each.
	6—1 1/8" x 2"	\$1.75
	7—1 3/8" x 2 1/4"	2.50


WITH SPHERICAL SHAPED END.

	No.	Each.
	8—13/16 x 5/8	\$1.25


WITH CHISEL SHAPED END.

	No.	Each.
	9—5/8 steel	\$1.25


WITH DIAMOND POINT END.

	No.	Each.
	10—5/8 High speed steel	\$1.35

SCRAPER.

	No.	Each.
	11—1/8 High speed steel	\$1.25

ROLLER.

	No. 12—	
	1 1/4	Roller 1/8" groove
	1 1/4	" 3/16 "
	1 1/4	" 1/4 "
	1 1/4	" 5/16 "

Sold in Set Complete with Handle.....\$3.50

SPECIAL WOOD HANDLES.

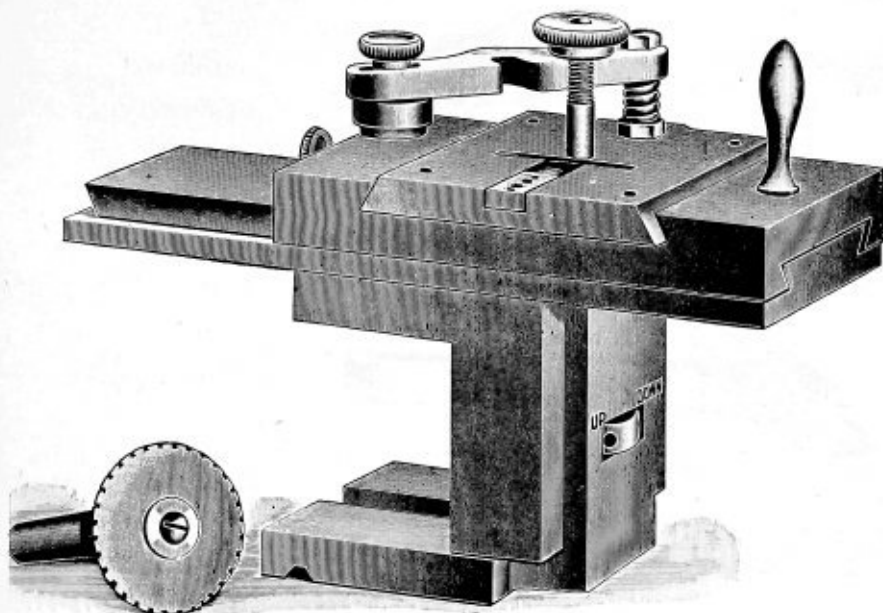


No. 13—16 in. long with steel Ferrule.....40c each



No. 14—10 in. long with steel Ferrule.....30c each

SPEED LATHE GROOVING ATTACHMENT.



For milling joint grooves for Locketts, Cases, Purses, etc.

It is bolted to the bed of the Speed Lathe, and has three movements, perpendicular, longitudinal and cross.

The cut represents the clamping device for holding down lockets, by removing this, it allows for gauges to hold cigarette cases, etc.

When clamp to lathe it squares itself, there being a slot to match the ways.

The perpendicular and longitudinal movements are operated with screws which gives fine and accurate adjustment.

It will fit any lathe.

The cross slide is 9 inches in length, and is gibbed to take up wear. Height over all, 7 inches. Weight, 15 pounds.

The recognized standard for the purpose.

Prices upon application.

ARMSTRONG LATHE TOOLS.

Each Tool is packed in a cardboard box, and price includes one Drop Forged Wrench and two Self-Hardening Steel Cutters, ground to shape.



STRAIGHT
TOOL
HOLDER.



ORDER BY
RESPECTIVE
NUMBER
IN EVERY
CASE
AND
AVOID
ERROR.

No. Left Hand	No. Straight	No. Right Hand	Size of Holder Inches	Size of Cutters	Net Weight	Price Complete	Extra Cutters Each
00-L	00-S	00-R	5-16x 5/8x4 1/2	3-16 in. sq.	1/2 lbs.	\$1.60	\$0.10
0-L	0-S	0-R	3/8x 3/4x5	1/4 " "	3/4 "	1.65	.12
1-L	1-S	1-R	1/2x1 x6	5-16 " "	1 1/4 "	1.80	.18

ARMSTRONG CUTTING-OFF TOOLS.

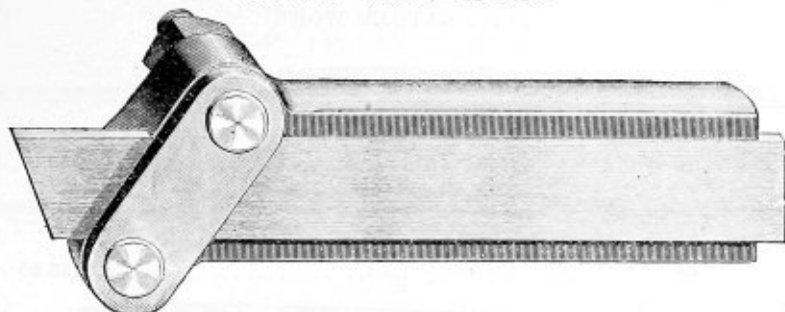
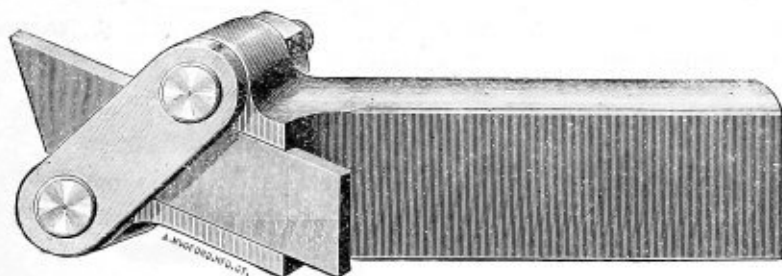


Each tool furnished complete with Drop Forged Wrench and one Self-Hardening Steel Blade.

Left Hand Off-Set	Straight Shank	Right Hand Off-Set	Size of Shank	Size of Blades	Complete	Extra Blades Each
No. 30-L	No. 20	No. 00-C	5-16x 3/4	3-32x9-16	\$1.65	\$0.25
" 31-L	" 21	" 30-R	3/8x1	3-32x5/8	1.65	.25
		" 31-R	1/2x1 1/8	1/8x3/4	1.80	.35

Be sure to affix page number to the item number, viz.: 1 only, No. 0-S—376. Then you will get what you want.

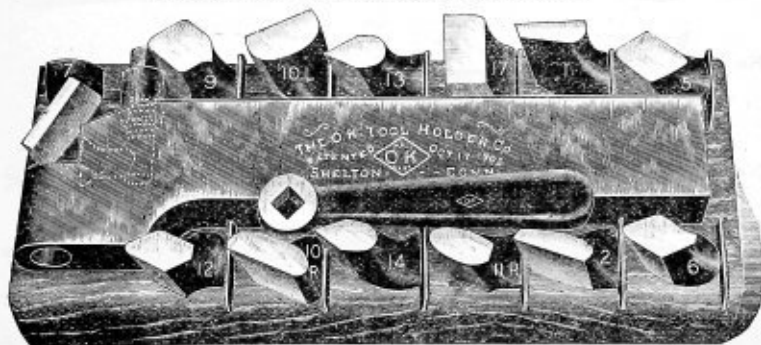
SLATE'S PATENT CUTTING-OFF TOOLS.

Shank of Holder, $1\frac{1}{8}$ " x $1\frac{1}{2}$ ".No. 1. Straight Holder with one $\frac{1}{8}$ " blade.....\$2.50No. 2. Off-Set Holder with one $\frac{1}{8}$ " blade.....\$2.50

The blades are 6 inches long, $\frac{7}{8}$ inch wide, milled and ground on both sides to give proper clearance.

Extra	{ 1-16"	3-32"	$\frac{1}{8}$ "	5-32"	3-16"	7-32"	$\frac{1}{4}$ " thick
Blades.	{ \$0.30	\$0.30	\$0.30	\$0.35	\$0.40	\$0.45	\$0.50 each

STANDARD LATHE WORKING SETS.

Size B, $\frac{1}{2}$ " x 1", set.....\$6.50

ARTS AND CRAFTS TOOLS.
FOR LEATHER WORK.



No. "A." Curved Point Modeling Tool.....\$0.60 each



No. B. Straight Oval Ends Modeling Tool.....\$0.60 each



No. D. Curved Point Tracing Tool.....\$0.50 each

No. E. Straight " " "50 "



No. F. Undercutting Tool.....\$0.50 each



No. G. Cutting and Trimming Knife.....\$0.50 each

UNDERCUTTING KNIVES.

No. H 

No. I 

No. J 

No. K 

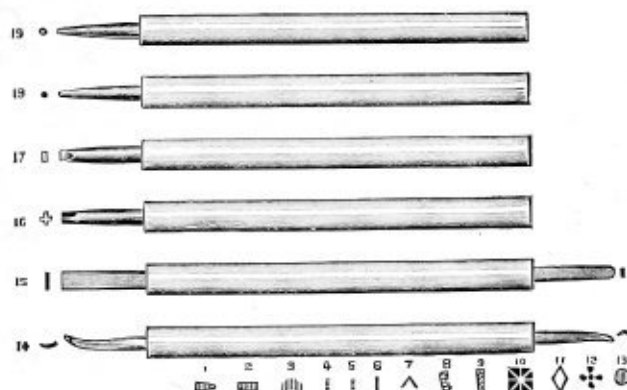
No. L 

Nos. H, I, J, K and L, all.....\$0.60 each

All Steel Modeling Tools.....\$0.50 each

Order by respective numbers and avoid error.

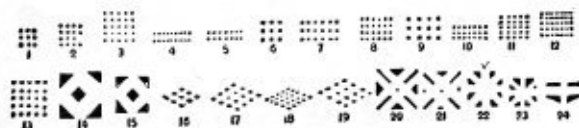
ARTS AND CRAFTS TOOLS. FOR LEATHER WORK.



The above tools are shown $\frac{1}{2}$ size.

Set No. 1— 4 Tools, Nos. 14-15-18-19.....	\$1.00
“ “ 2— 6 “ “ 14 to 19, inclusive.....	1.25
“ “ 3—16 “ “ 1 “ 16, “	3.50
Single Tools, any design.....	.35c each

MATTING TOOLS.



These are used for background work.

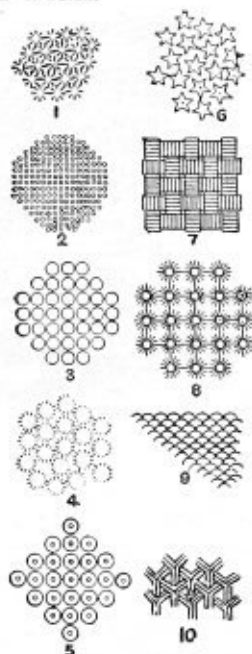
Set. No. 4—24 Tools, Nos. 1 to 24, inclusive.....	\$6.00
“ “ 5—12 “ any selected designs.....	3.00
Single Tools, any design.....	.35c each

ARTS AND CRAFTS TOOLS.

BACKGROUND STAMPS FOR LEATHER WORK.

The adjoining illustrations represent background work as produced by tools shown at the bottom of this page, bearing respective numbers 1 to 10, inclusive. These background stamps produce a fine ground-work in which the separate marks cannot be distinguished. For the ground of the design, select from the stamps the one most suited to the shape of the model, and the impression may be made on the leather by striking the tool lightly with a hammer. Should the leather become dry while it is being worked, it may be softened with a sponge. No. 1 tool has seven points, radiating to the center. Two different effects may be produced with this tool, one by placing the tool in a regular line, another by turning the tool irregularly.

Nos. 2 and 3 are ring tools, made in several sizes. Nos. 4, 5 and 8 are used in two rows.



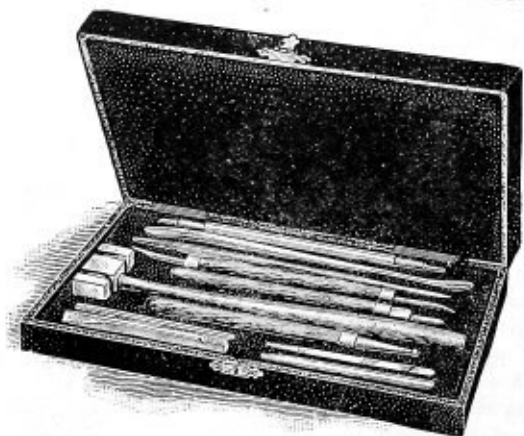
Single Tools as shown below, 35c each, any design.



1 Set of 10 Tools, assorted designs.....\$3.00



This hammer is specially designed for leather work. Price.....\$0.85 each

ARTS AND CRAFTS TOOLS.
HANDY OUTFITS.

Outfit No. 1.....\$5.00

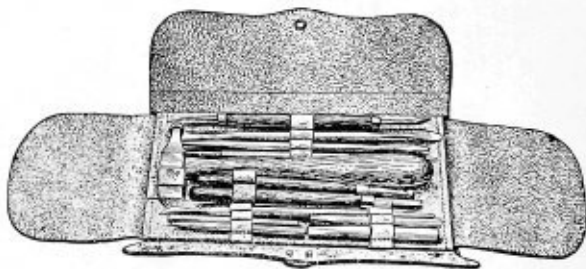
This case is $8\frac{1}{4}$ " long by 6" wide. It has an imitation morocco cover, with velvet lining. The case contains 10 tools:

1 Punch, 1 Cutting and Trimming Knife, 2 Modeling Tools, 1 Hammer, 1 Burnisher, 1 Embossing Ball Tool, 4 Chasing and Pearling Tools.

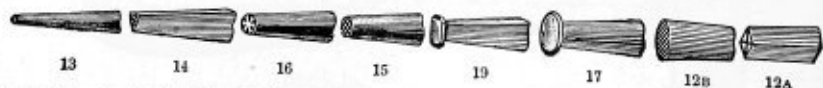
Outfit No. 2, \$10.00. The case is $11\frac{1}{4}$ "x $8\frac{1}{4}$ ", same as the one shown above. It contains 16 tools, viz.: 1 Clamp, 1 Embossing Ball Tool, 5 Chasing and Pearling Tools, 1 Punch, 1 Steel Burnisher, 4 Modeling Tools, 1 Hammer, 1 Paring Knife, 1 Cutting and Trimming Knife.

Outfit No. 3.....\$7.00

A neat leather pocket case containing 11 tools: 2 Modeling Tools, 1 Steel Hammer, 2 Embossing Tools, 1 Punch, 1 Embossing Tool, 1 Cutting and Trimming Knife, 4 Chasing and Pearling Tools.



CHASING AND PEARLING TOOLS.



Outfit No. 4. Set of 8 tools, unmounted.....\$3.00
Single tools, any shape.....50c each

LEVELS.

IRON LEVELS.

No. 130.



BENCH LEVEL.

No. 130. $3\frac{1}{2}$ inches long..... \$0.30

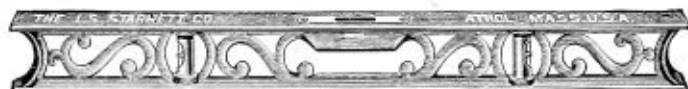
NICKEL PLATED POCKET LEVELS.

No. 135.

No. 135-A. $2\frac{1}{2}$ inches long..... \$0.40" 135-B. $3\frac{1}{2}$ inches long..... 0.50

BENCH LEVELS WITH DOUBLE PLUMBS.

No. 132.



No. 132 C.	4 inch,	with square ends.....	\$1.35
" 132 D.	6 "	" " " "	1.50
" 132 E.	9 "	" " " "	1.65
" 132 G.	12 "	" " " "	1.75
" 132 H.	18 "	as in bottom cut.....	2.00
" 132 J.	24 "	" " " "	2.25



All Double Plumb Levels have longitudinal grooves in seat of base, as shown in small cut, adapting them to set on cylindrical work, piping, shafting, etc., and also improving them for flat work. This concave groove is a section of about 1 inch circle and is perfectly true in relation to the base. The outer edges of the concave only touch the surface of a round, unless it be less than 1 inch diameter, and is an improvement over a deep V groove, being, as we make them, absolutely accurate, and doing away with a clumsy base.

Do not fail to order by respective number, and be sure to affix the page number—viz., 1 only No. 132 G—383.

MALLET.

Boxwood, Dogwood, Hickory, Rubber.



No. "A." Imported Boxwood Mallets.....\$2.00 dozen. 20c each.

No. "B." Imported Lignumvitae Mallets... 2.00 dozen. 20c each.

The Handle is screwed into the head.

RUBBER MALLET.



DOGWOOD MALLET.



No.	Length of Head.	Diameter of Face.	Approx. Weight.	Per Dozen.
"C."	3 in.	2¼ in.	1½ lb.	\$15.00
"D."	4 in.	2¾ in.	1¾ lb.	20.00
"E."	4½ in.	2½ in.	2¼ lb.	27.00

These mallets can be used on the best of finished work without marring it. Prices include handles fitted.

No.	Diam.	Length.	Per Doz.
1	1¼"	2 "	\$1.00
2	1½	2¼	1.10
3	1¾	2½	1.25
4	1¾	3	1.50
5	1¾	3¼	1.60
6	2	3½	1.70
7	2½	4	1.80
8	2¼	4½	2.00
9	2½	5	2.50
10	2¾	5½	3.00
11	3	6	3.50
12	3½	6½	4.00

"Dimensions are approximate"

SILVERSMITHS' MALLET.

MADE OF SPECIALLY SELECTED DOGWOOD.

No.	Diam.	Length.	Dozen.
20	1½"	5"	\$1.75
21	1½	6	2.00
22	1¾	5	2.20
23	1¾	6	2.30
24	2	5	2.40
25	2	6	2.50



Order by respective number and be sure to affix the page number in every case—viz., 1 dozen No. 6—384.

RAW HIDE MALLETS.



These are light Mallets, made entirely of hide (except the handle).

No.	Diam.	Length.	Weight.	Price	
				Per Doz.	
0	1 in.	2½ in.	1½ oz.		\$ 3.60
1	1¼ "	2¾ "	3½ "		4.50
2	1½ "	3 "	6 "		5.40
3	1¾ "	3½ "	7½ "		6.25
4	2 "	3¾ "	10 "		8.00
5	2¾ "	4¼ "	21 "		17.75
6	2¾ "	4¾ "	23 "		22.20

PATENT RAW HIDE MALLETS.

Loaded.



A central strip of soft metal rolled up with the hide, the weight is doubled without increasing the size.

No.	Diam.	Length.	Weight.	Price	
				Per Doz.	
7	1¼ in.	2¾ in.	7 oz.		\$ 5.40
8	1½ "	3 "	12 "		6.25
9	1¾ "	3½ "	15 "		7.15
10	2 "	3¾ "	20 "		9.00
11	2¾ "	4¼ "	42 "		18.00

HIDE FACED HAMMERS.



When worn out, the faces can be renewed at slight cost. The new faces need no fastening except a tight fitting in the shell.

List of Prices Without Extra Faces.

No.	Weight.	Diam. of Face.	Extra Faces	
			Price Per Doz.	Pairs.
100	½ lb.	1 in.	\$ 8.90	\$2.75
101	1 "	1¼ "	10.50	2.90
102	1½ "	1½ "	13.30	3.60
103	2 "	1¾ "	15.90	4.50
104	4 "	2 "	23.00	6.25
105	5½ "	2¾ "	33.00	9.00

No. 100 has a shell or casting of bronze.

Note.—By affixing page number to item number—viz., 2 only No. 102—385—it helps both of us. How? It helps you to locate the item immediately when you are ready to check up your invoice, and assists us in filling orders quickly and accurately.

FIBRE AND METAL FACED MALLETS.

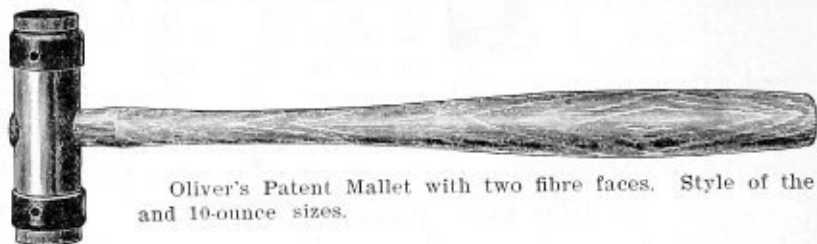


2 1/2-ounce Mallet, with detachable brass and fiber faces. Rosewood handle.
No. 92.....75 Cents Each

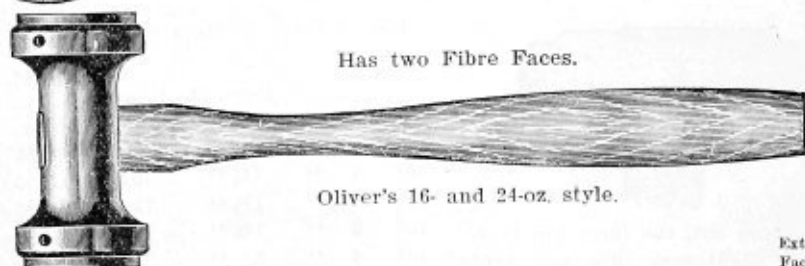


5-ounce Mallet, nicked. Rosewood handle. Detachable faces; one brass and one hard fibre face with each hammer.

No. 93.....75 Cents Each



Oliver's Patent Mallet with two fibre faces. Style of the 5 and 10-ounce sizes.



Has two Fibre Faces.

Oliver's 16- and 24-oz. style.

No.	Weights	Face Diameter		Single		Per Doz.	Extra Faces Per Doz. Pairs
1	5 oz.	3/4"	(Hay).	\$0 60	(Hole).	\$6 00	\$0 50
2	10 oz.	1"	(Haze).	60	(Holls).	6 00	50
3	16 oz.	1 1/4"	(Hazel).	85	(Holly).	9 00	75
4	24 oz.	1 3/4"	(Hazy).	1 10	(Hollow).	12 00	1 00

Order by respective number and affix the page number every time, viz.:
3 only No. 93—386.

BRACELET MANDRELS.



END
VIEWS.



Tapering Mandrel.

Represents Small Ends.

No. A.	Round Tapering Mandrel.....	\$4.00
No. B.	Oval " " ".....	5.00

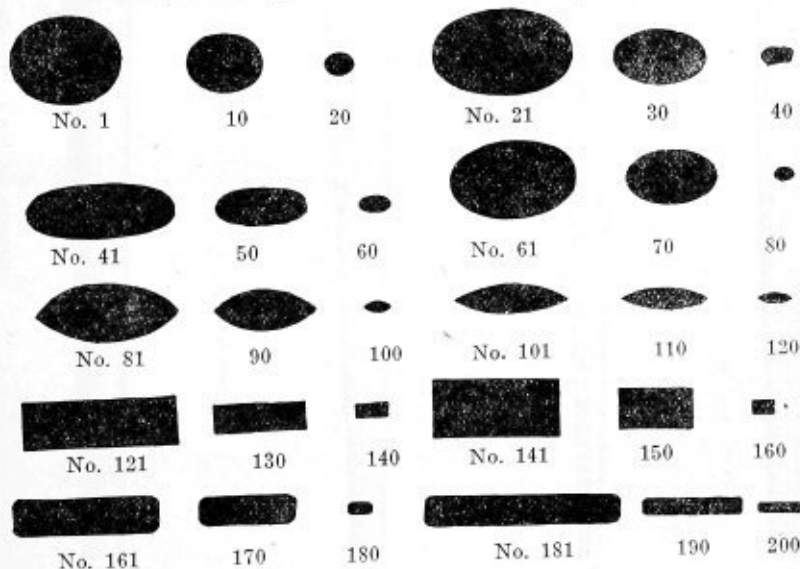
SIZE OF ROUND.	Small End, $1\frac{3}{4}$ " diam.	{ Length 10 inches.
	Large End, $3\frac{1}{2}$ " diam.	
SIZE OF OVAL.	Small End, $1\frac{11}{16} \times 2$ "	{ Length $11\frac{1}{4}$ inches.
	Large End, $3 \times 3\frac{3}{8}$ "	

CHAIN MAKERS' MANDRELS.

Parallel Mandrels—about 13" long—For shaping links.

Each shape is made in twenty sizes.

Genuine Imported Goods—Finest Quality Steel.



Illustrations are exact sizes of the largest, medium and smallest sizes of each shape. When ordering give numbers for exact sizes above. For intermediate sizes give dimensions as near as possible. Always affix nearest number in shape wanted.

All shapes and sizes, \$1.50 lb.; or, 15c per ounce.

STEEL RING MANDRELS.



No. 108. U. S. Standard, graduated steel mandrel ground true.
No. 109. The same as 108, but not graduated.



No. 107.
Not graduated. Hard, smooth taper mandrel. For hammering rings to size and shape.



No. 106.
U. S. St'd. Hardened and Graduated.
These mandrels are accurately ground to size.



No. 105.
Genuine Allen's. Hardened and Graduated.
These Mandrels are accurately ground to size.

No. 108 \$1 00
No. 109 60

No. 107
\$2 00 Each

No. 106
\$2 00 Each

No. 105
\$2 00 Each

Affix page number to item number sure, viz.: 1 only 107—388. This system is of great benefit to you.

STEEL RING MANDRELS.



OVAL
HARDENED

Number.....	A \$1.50	B \$2.25	C \$3.00
Lengths.....	8"	10"	12"
Small End	$\frac{1}{4} \times 7/32$ "	$\frac{3}{8} \times 5/16$ "	$\frac{5}{8} \times 9/16$ "
Large End	$\frac{5}{8} \times 1\frac{1}{2}$ "	$\frac{7}{8} \times 3/4$ "	$1\frac{1}{8} \times 7/8$ "



ROUND
SOFT STEEL

Number	D \$0.70	E \$0.80	G \$0.90	H \$1.00
Lengths.....	8"	10"	12"	14"
Tapering	$3/16$ " to $3/8$ "	$1/4$ " to $1/2$ "	$3/8$ " to $3/4$ "	$1/2$ " to 1"



ROUND
HARDENED

The following two Mandrels are accurately ground:

No. J	\$3.00	12" long, tapering from $1/2$ " to 1"
No. K	4.00	14" " " " " $1/2$ " " 1"



ROUND
SOFT STEEL

A GRADUATED MANDREL.

No. L. \$1.00 14" long, tapering from $3/8$ " to $15/16$ "

GRADUATED, HARDENED MANDREL

With a Large Groove

For Holding All Kinds of Set Rings.

No. M \$3.50



This Mandrel is Graduated to the Allen "Standard."
It is made of Hardened Steel—Nicely Polished.

No. N \$2.50 Each "or" \$27.00 Dozen

LATHE RING MANDRELS.

Set of 3 holds all Sizes Nos. 1 to 13.

No. P. Set of three, \$5.00

Single {	\$2.00	No. R	No. S	No. T
Sizes {	Each	Small	Medium	Large

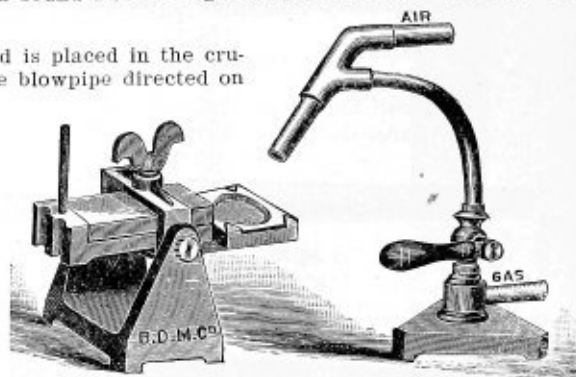
MELTING ARRANGEMENTS.

For Illuminating Gas Only.

Both styles will melt a sound 2-ounce ingot of gold or silver in about two minutes.

The metal to be melted is placed in the crucible, and the flame of the blowpipe directed on it until it is perfectly fused. The whole is then tilted over by means of the upright handle. No flux should be used with the Carbon Crucibles.

The plate mould will cast an ingot $1\frac{1}{8}$ in. x $1\frac{3}{8}$ in. x $\frac{1}{8}$ in. thick; wire mould $\frac{1}{8}$ in. x $\frac{1}{8}$ in. x $2\frac{3}{4}$ in. long.



No. 8.

No. 8a.

No. 8. Melting Arrangement, with both wire and plate moulds.....	\$3 25
No. 8a. Blowpipe	2 25
No. 7. Wire Moulds	1 25
No. 6. Plate Moulds	1 25
No. 5. Extra Carbon Crucibles, without slides, for No. 8, per doz...	1 00
No. 4. Extra Carbon Crucibles, with slides, for No. 8, per doz.....	1 75



No. 8d.

In this arrangement the two parts of the ingot mould slide on each other, to enable ingots of any width to be cast, and the blowpipe is part of the rocking stand. When the metal is melted in the shallow crucible of moulded carbon, tilt the whole apparatus over so as to fill the ingot mould. The No. 10a Blower must be used with the 8d Melting Arrangement.

No. 8d ingot mould will cast an ingot 2 in. long x $\frac{1}{8}$ in. thick, and any width from $1\frac{1}{2}$ in. down.

No. 8d. Melting Arrangement, with ingot mould.....	\$3 00
No. 3. Ingot Mould, if ordered separately.....	1 25
No. 2. Extra Carbon Crucibles, without slides, for No. 8d, per doz	1 00
No. 1. Extra Carbon Crucibles, with slides for No. 8d, per doz....	1 75

Order by respective numbers and be sure to affix page number—thus avoid error—viz.: 1 only No. 8a—390.

METALS

IN SHEET OR WIRE FORM.

Aluminum in Bars, Sheet or Wire
 Antimony :: :: :: Babbitt
 Bismuth — Brass Sheet or Wire
 Copper Punchings — Sheet or Wire
 German Silver — Sheet or Wire
 Lead (Test)

Oreide in Sheets, 6' wide
 O r e i d e W i r e
 Platers' Metal—Spelter Tin
 Zinc—Granulated C. P.
 Zinc—Mossey C. P.

SHOT COPPER, C. P.

THIS "Copper" is our own manufacture. We guarantee it to be absolutely chemically pure, 999 fine. Specially prepared for Jewelers, Silversmiths, Watch Case Makers, Optical Goods Manufacturers, Etc. For Alloying Gold and Silver.

Put up in 10lb. Pkgs. 100 lbs. in a case or sold in bulk as may be desired.

Prices upon request. Subject to market fluctuations.

GRANULATED COPPER, C. P.

This is the same quality as "Shot Copper". The granulated form is preferred by some owing to its size, being somewhat larger.

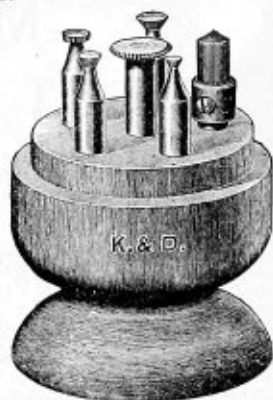
Put up the same as Shot Copper.

GET OUR PRICES BEFORE BUYING ELSEWHERE. IT WILL PAY YOU

MILLING TOOLS.



No. 202. \$0.75

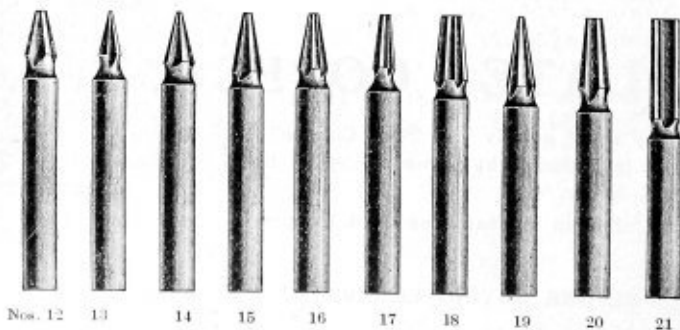
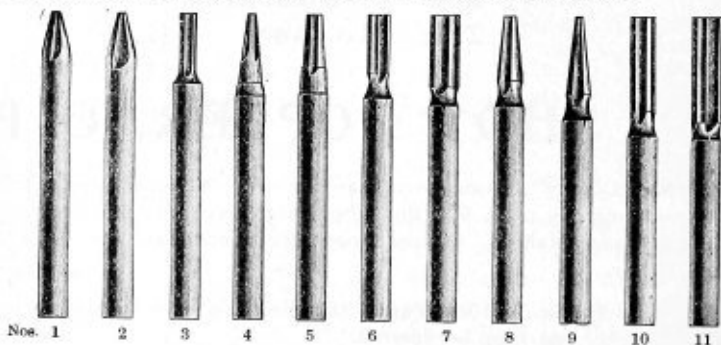


No. 303. \$1 50

MILLING CUTTERS.

For use in Machine on opposite page. All illustrations are full size.

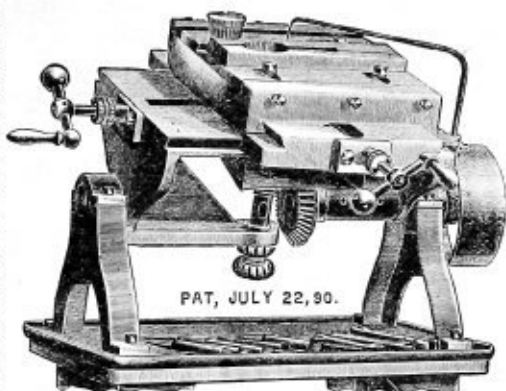
All No 's
\$4 00 Doz.
or 40c Each.



All No's.
\$6 25 Doz.
or 60c Each.

DIE MILLING MACHINE.

This machine is built for any purpose requiring Blanking, Trimming or Punching Dies, such as silverware, jewelry, bicycles, firearms, drop forgings, typewriters and sewing machines. The frame is supported upon trunnions or gudgeons which hold it in any desired position that the operator may secure the best possible light on the surface of the work. The spindle is vertical and adjustable. The cutter projects through an opening in the chuck, in which the work is clamped, and is straight or tapered to suit the amount of clearance required in the die. It is only necessary to drill one hole through the die, and the cutter starting in this hole removes the entire center in a single piece. The chuck is moved in either direction by means of two slides at right angles to each other, and by use of the hand wheels the lines laid out on the surface of the work can be accurately followed.



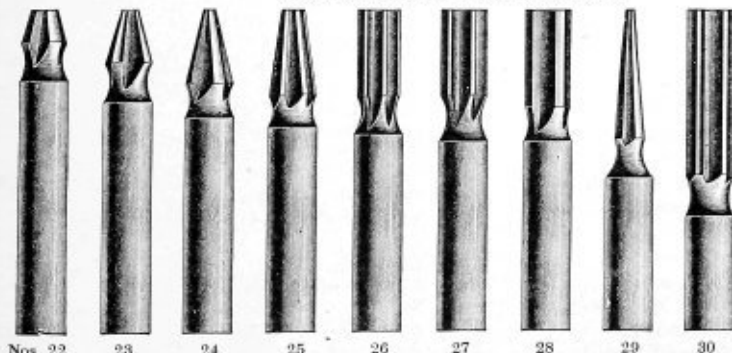
SPECIAL NOTE.—The pointer at the right remains in a fixed position with reference to the cutter when below the surface of the work, and indicates its exact position. This is convenient in cases where a sharp corner is to be made, when the cutter can be lowered and the cutting continued, guided by the pointer, thus leaving very little to be filed.

Two sizes are built, No. 1 the small machine, will hold a plate 6 inches wide, $\frac{5}{8}$ -inch thick, and any length; No. 2, the large machine, 10 inches wide, 2 inches thick and any length.

Prices upon application.

MILLING CUTTERS.

For Use in the Above Machine.



OTHER
MILLING
CUTTERS
ON THE
OPPOSITE
PAGE.

All No's \$8 50 Dozen. 80c Each.

Always affix page number to item number when writing orders.

MISCELLANEOUS MATERIALS.

Number of Item.	Name of Article.	Price Per Pound.	Number of Item.	Name of Article.	Price Per Pound.
1.	Acid—Boracic in crystals...	\$0.18		Cement Filling—	
2.	" " " powder...	18	49.	J. and S. Brand.....	\$0.10
3.	" Oxalic	12		Cement—Pearl Liquid—	
4.	" Phosphoric Glacial...	1.00	50.	Lafayette Brand, in Bot-	
5.	Alum—ground	5		tles. Each	15
6.	" in lump	5		Cement—Pearl—	
7.	Ammoniac—Sal	12	51.	Lafayette Brand. Price	
8.	Arsenic—Red Saxony	12		per Stick Each	60
9.	" White	15		Chasers—Cement—	
10.	Ash—Bone	6	52.	Dark, first quality	30
11.	" Pearl	10	53.	Light, first quality	30
12.	" Soda Caustic	10	54.	Dark, second quality	25
13.	" Soda	5	55.	Light, second quality	25
14.	Assay Lead	50	56.	Chloride of Lime	10
15.	Barl—Soap (powdered)....	20	57.	Clay—Fire	5
16.	" " (whole)	20	58.	" Stove	5
17.	Bicarbonate Soda	6	59.	Coal—Sea	10
18.	Bichromate Potash	15	60.	Copperas	5
19.	Black—Bone	10	61.	Cream Tartar	35
20.	" Ivory	15	62.	Cyanide Potash	40
21.	" Lamp	15	63.	" Potassium—C. P.	40
22.	" Pitch	10	64.	" " Fused..	30
23.	Blue Vitriol	12	65.	Dixon's Graphite (No. 643).	40
24.	Bone—Ash	6	66.	" " (No. 649) ..	50
25.	" Black	10	67.	Dust—Bone	6
26.	" Dust	6	68.	Earth—Fuller's	5
27.	" Ground	5	69.	Feldspar	5
28.	Boracic Acid in Crystals...	18		Filling—Cement—	
29.	" " " Powder	18	70.	Lafayette Brand	10
30.	Borax—Glass	25		Filling—Cement—	
31.	" Lump	12	71.	J. and S. Brand.....	10
32.	" Melting	12	72.	Fire Clay	5
33.	" Powdered	12	73.	Flake Glue	20
34.	" Prepared	35	74.	Fluorspar	6
35.	" Slate	40	75.	Flux—Phoenix	15
36.	Borum chunk	1.00	76.	" Refining	15
37.	Burgundy Pitch	10	77.	" 20th Century	15
38.	Carbonate—Potash	10	78.	French Casting Sand.....	5
39.	" Soda	5	79.	Fuller's Earth	5
40.	" Zinc	20	80.	Glass—Borax	25
41.	Casting Sand—French	5	81.	" Ground	15
42.	Caustic—Potash	10	82.	Glue—Ground	20
43.	" Soda	10	83.	" Flake	20
	Cement—Chasers—		84.	Graphite—Dixon's No. 643..	40
44.	Dark, first quality	30	85.	" " " 649..	50
45.	Light, first quality	30	86.	Granulated Saltpetre	12
46.	Dark, second quality	25	87.	Ground Alum	5
47.	Light, second quality	25	88.	" Bone	5
	Cement Filling—		89.	" Glass	15
48.	Lafayette Brand	10	90.	" Glue	20
			91.	Iron—Sulphate of	5
			92.	Ivory—Black	15

MISCELLANEOUS MATERIALS—Continued.

Number of Item.	Name of Article.	Price Per Pound.	Number of Item.	Name of Article.	Price Per Pound.
92.	J. & S. Cement Filling.....	\$0.10	136.	Prepared Borax	\$0.35
93.	Jewelers' Soap	10	137.	Prussiate Potash—Yellow...	30
94.	Lafayette Liquid Pearl Ce- ment, in bottles, each....	15	138.	Red Saxony Arsenic.....	12
95.	Lafayette Pearl Cement, price per stick, each.....	60	139.	Refining Flux	15
96.	Lamp Black	15	140.	Rock Potash	10
97.	Lead—Assay	50	141.	Rosin	5
98.	Lime—Chloride of	10	142.	Sal Ammoniac	12
99.	Liquid Pearl Cement, La- fayette Brand, in bottles, each	15	143.	" Soda	2
100.	Litharge	12	144.	Salt	2
101.	Lump Alum	5	145.	Saltpetre—Granulated	12
102.	" Borax	12	146.	" —Lump	12
103.	" Saltpetre	12	147.	" —Powdered	12
104.	Lye	10	148.	" —Triple Refined....	15
105.	Melting Borax	12	149.	Salts—Nickel—Double	20
106.	Moulding Sand	10	150.	" " —Single	25
107.	Nickel Salts—Double	20	151.	Sand—French Casting	5
108.	" " Single	25	152.	" for Blasting (See Sand Blasts)	
109.	Ochre, Yellow	5	153.	" —Sea	2
110.	Orange Shellac	70	154.	Sea Coal	10
111.	Oxalic Acid	12	155.	" Sand	2
112.	Oxide—Zinc	15	156.		
113.	Paris—Plaster	4	157.	Shellac, Orange	70
114.	Pearl Ash	10	158.	Slate Borax	40
115.	" Liquid Cement, bottle, Lafayette Brand....	15	159.	Soap Bark—Powdered.....	20
116.	" Cement, Lafayette Brand, price per stick, each	60	160.	" " —Whole	20
117.	Phoenix Flux	15	161.	Soap—Jewelers'	10
118.	Phosphoric Glacial Acid....	1.00	162.	Soda Ash	5
119.	Pitch—Black	10	163.	" " —Caustic	10
120.	" —Burgundy	10	164.	Soda—Bicarbonate	6
121.	" —White	10	165.	" —Carbonate	5
122.	Plaster Paris	4	166.	" —Caustic	10
123.	Potash—Bichromate	15	167.	" —Sal	2
124.	" —Carbonate	10	168.	Stove Clay	5
125.	" —Caustic	10	169.	Sulphate of Iron.....	5
126.	" —Cyanide	40	170.	Sulphide—Potash	20
127.	" —Rock	10	171.	Sulphurette—Potash	20
128.	" —Sulphide	20	172.	Tartar—Cream	35
129.	" —Sulphurette	20	173.	Triple Refined Saltpetre..	15
130.	" —Yellow Prussiate....	30	174.	20th Century Flux.....	15
	Potassium—Cyanide—		175.	Vitriol—Blue	12
131.	Chemically Pure	40	176.	White Arsenic	15
132.	Fused	30	177.	" Pitch	10
133.	Powdered Borax	12	178.	Whole—Soap Bark	20
134.	" Saltpetre	12	179.	Yellow Ochre	5
135.	" Soap Bark	20	180.	" Prussiate Potash....	30
			181.	Zinc—Carbonate	20
			182.	" —Oxide	15

MORTARS AND PESTLES.



"WEDGEWOOD."

GUARANTEED ACID PROOF.

No.	Diam. Inches	Approximate Capacity	Each
0000.	3	3 ounces....	\$0.40
000.	3½	3½ ounces....	.45
00.	3½	6 ounces....	.50
0.	4	8 ounces....	.65
1.	4½	10 ounces....	.75
2.	5	¾ pint....	.85
3.	6	1¼ pints....	1.00
4.	6½	1¾ pints....	1.25
5.	7	2½ pints....	1.50
6.	8	3 pints....	1.80
7.	8½	4 pints....	2.25



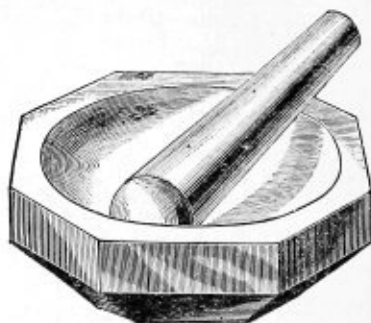
"GLASS."

No.	Diam. inches.	Capacity	Each
13.	2	1 ounce.....	\$0.20
14.	2¾	2 ounces.....	.25
15.	3¾	4 ounces.....	.30
16.	4¾	8 ounces.....	.45
17.	5¾	1 pint.....	.65
18.	7	1 quart.....	.90



"IRON."

No.	Capacity	Each
19.	½ pint.....	\$0.35
20.	1 pint.....	.45
21.	1 quart.....	.75
22.	2 quarts.....	1.25
23.	4 quarts.....	1.75
24.	8 quarts.....	3.00



"AGATE."

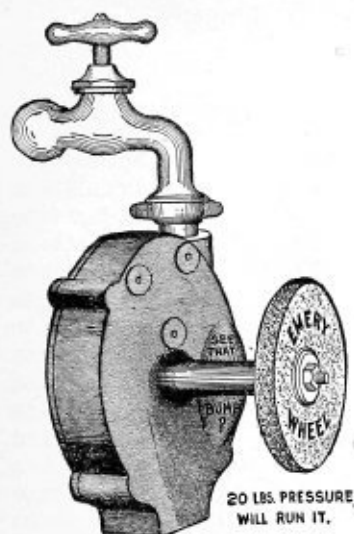
Order these by specifying diameter.

No.	Diam. inches.	Each.	No.	Diam. inches.	Each.
70	1½	\$1.25	408	3¾	\$7.25
76	1¾	1.50	456	4	7.75
88	2	1.80	515	4¼	8.75
100	2¼	2.50	646	4½	10.00
150	2½	3.00	850	5	13.50
183	2¾	3.50	1075	5½	20.00
210	3	4.00	1445	6	25.00
266	3¼	5.00	2175	6½	Special
361	3½	6.50	4030	8	"

LIPPINCOTT WATER MOTORS.

MADE OF BEST QUALITY IRON CASTINGS, SOLID AND SUBSTANTIAL.

These Motors are suitable for any purpose requiring power within their capacity, and even where water must be paid for by meter they will be unusually more economical than electricity, and with less first cost, and practically no danger of getting out of order. They are used for sharpening and polishing cutlery, washing bottles, running sewing machines, fans, jewelers' and dental lathes, and air compressors.



Motors are equipped with standard hose connections, and should fit any standard faucet, but special connections will be furnished for 50 cents each, to fit any faucet, threaded or smooth, if we are given data from which we can work.

PRICES, F. O. B. NEWARK, N. J.

CASH WITH ORDER ONLY.

(NO MOTOR SENT C. O. D.)

No. 1—5-inch diameter of casing.....	\$ 2.50
No. 2—6-inch diameter of casing.....	3.50
No. 3—8-inch diameter of casing.....	10.00
No. 4—12-inch diameter of wheel.....	20.00

In every letter concerning Water Motors, always state water pressure.

The prices include a fine emery wheel for cutlery grinding, cotton buff wheel, two sticks of polishing rouge, finest quality, extra nozzle (or jet) and small grooved pulley, all in neat box.

For 50c. extra NET, a larger emery and buff wheel will be sent.

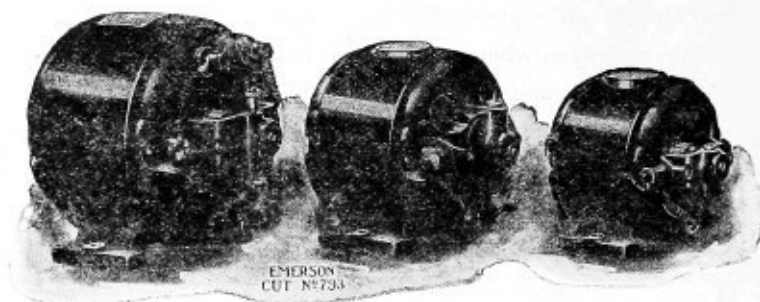
Emery wheels, if ordered separately, 50c., 75c. and \$1.00.

Pulley for round belt, 25c.

Two-speed pulley, 40c.

Be sure to affix page number to every item ordered.

BIPOLAR VENTILATED MOTORS.
FOR DIRECT CURRENT.



No.	Codeword	Vltge.	Winding	H. P.	Approx. Wts. Full			List Price
					R. P. M.	Load	Net	
A	Mabocadejo	110	Shunt	1/20	1,800	75	12	\$14.00
B	Mabocadihi	220	"	1/20	1,800	85	12	16.00
C	Mabocadque	110	"	1/16	2,400	90	12	14.00
D	Mabocaffia	220	"	1/16	2,400	100	12	16.00
E	*Mabocagado	110	Series	1/20	1,800	75	12	12.50
G	*Mabocagapa	220	"	1/20	1,800	80	12	14.50
H	Mabocaggio	110	"	1/16	2,400	90	12	12.50
J	Mabocagofe	220	"	1/16	2,400	95	12	14.50
K	Mabocabafo	110	Shunt	1/16	1,400	90	17	16.50
L	Mabocabica	220	"	1/16	1,400	100	17	18.50
M	*Mabocabylo	110	"	1/10	1,800	130	17	16.50
N	*Mabocabysa	220	"	1/10	1,800	140	17	18.50
P	Mabocacalo	110	"	1/8	2,400	150	17	18.00
R	Mabocacarv	220	"	1/8	2,400	160	17	20.00
S	Mabocacepe	110	Series	1/16	1,400	90	17	15.00
T	Mabocachou	220	"	1/16	1,400	100	17	17.00
U	*Mabocacento	110	"	1/10	1,800	130	17	15.00
V	*Mabocadaee	220	"	1/10	1,800	140	17	17.00
W	Mabocadana	110	"	1/8	2,400	150	17	16.50
X	Mabocaddio	220	"	1/8	2,400	160	17	18.50

Items marked with the asterisk () carried in stock.

Price includes pulley. Rheostats not required. Data correct when issued, but subject to change.

Always order by number and be sure to affix the page number.

BIPOLAR VENTILATED MOTORS.

FOR DIRECT CURRENT.

Special Note.—Motors in this frame which are carried regularly in stock have a slightly compounded winding, which is better suited for most service than a plain shunt winding. These compound-wound motors operate very nearly like shunt motors, and under ordinary conditions the speed will not vary objectionably with variations in load, while such motors have better starting torque and are better suited to withstand unfavorable conditions.

No.	Codeword	Vltge.	Winding	H. P.	Approx. Watts Full			List Price
					R. P. M.	Load	Net	
1.	Mabocafoc	110	Comp.	1/8	1,400	150	32	\$20.50
2.	Mabocafoc	220	"	1/8	1,400	160	32	22.50
3.	*Mabocafoti	110	"	1/6	1,800	190	32	20.50
4.	*Mabocafulo	220	"	1/6	1,800	200	32	22.50
5.	Mabocagolo	110	Series	1/8	1,400	150	32	19.00
6.	Mabocagria	220	"	1/8	1,400	160	32	21.00
7.	Mabocagumo	110	"	1/6	1,800	190	32	19.00
8.	Mabocagya	220	"	1/6	1,800	200	32	21.00
9.	Mabocahabi	110	Comp.	1/6	1,200	175	42	32.50
10.	Mabocahafe	220	"	1/6	1,200	185	42	32.50
11.	*Mabocahala	110	"	1/4	1,800	270	48	37.50
12.	*Mabocahabe	220	"	1/4	1,800	280	48	37.50
13.	Mabocahemu	110	Series	1/6	1,200	175	42	32.50
14.	Mabocahijo	220	"	1/6	1,200	185	42	32.50
15.	Mabocahole	110	"	1/4	1,800	270	42	32.50
16.	Mabocahota	220	"	1/4	1,800	280	42	32.50

Items marked with the asterisk () carried in stock.

Prices include pulleys for all motors listed.

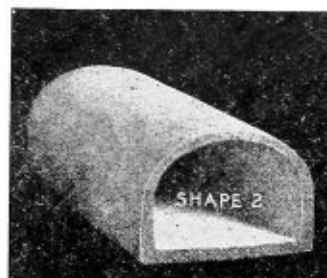
Price of $\frac{1}{4}$ h. p. compound-wound motor (1,800 r. p. m.) includes automatic release starting box. Other sizes and windings are furnished without rheostats, which are not required.

Data correct when issued, but subject to change.

Order by respective numbers and be sure to affix the page number.

The first tells the item wanted; the second, the pages on which the item is to be found.

This system will be found of great value when you have an invoice to check off.



MUFFLES.

Always order by respective letter number and be sure to state whether you want the vent hole at the back or on top or no hole at all.

INSIDE MEASUREMENTS.

OUTSIDE MEASUREMENTS.

No.	Deep	Wide	High	Price		Deep	Wide	High
				Each				
A1.	5½"	3¼"	2 "	.....	\$0.60	5½" x	3¼" x	2½"
A2.	7 "	3¼"	2 "	.....	.65	7¼" x	3¼" x	2½"
A3.	9½"	5½"	3¾"	.....	1.00	10¼" x	6½" x	4½"
A4.	12¼"	6¼"	3¾"	.....	1.15	13 " x	7¾" x	4¾"
A5.	17½"	10 "	6½"	.....	3.00	19¾" x	11½" x	7½"

All of the above are regular sizes of No. 2 shape, which is like the above illustration.

ODD SIZES—TO ORDER—No. 2 SHAPE.

Outside Measurements.

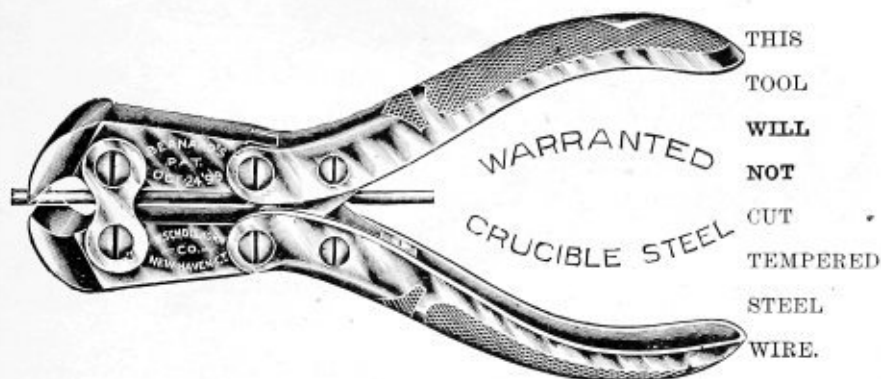
Inside Measurements.

Always Used in specifying Muffles.

For determining capacity.

Letter	Width	Length	Height	Width	Height	Greatest		Each
						Side	Height	
AAA	2½ in.	6 in.	1¾ in.	.....	.....	.....	.....	\$0.50
AA	3 in.	7 in.	2¼ in.	.....	.....	.....	.....	.50
BB	3½ in.	6 in.	2½ in.	.....	.....	.....	.....	.50
CC	4¾ in.	8 in.	3 in.	.....	.....	.....	.....	.60
C	4¾ in.	8 in.	3 in.	.....	.....	.....	.....	.60
H	5¼ in.	10½ in.	3¾ in.	.....	.....	.....	.....	.75
F	6 in.	10 in.	4 in.	5¼ in.	.....	3½ in.	.....	.75
FF	6 in.	10 in.	4 in.	5¼ in.	.....	3½ in.	.....	.75
J	6 in.	12 in.	4 in.	4¾ in.	.....	3½ in.	.....	.90
D	7 in.	10 in.	4¾ in.	6 in.	.....	3½ in.	.....	.75
CD	7 in.	10½ in.	4¾ in.	5¾ in.	.....	3½ in.	.....	.75
L	9 in.	15 in.	5¾ in.	7¾ in.	.....	4½ in.	.....	1.50
I	10 in.	16 in.	6½ in.	8¾ in.	2½ in.	5 in.	.....	1.75
JJJ	10 in.	18 in.	6¼ in.	8¾ in.	2½ in.	5 in.	.....	2.00
NNN	10 in.	19 in.	6¼ in.	8¾ in.	2½ in.	5 in.	.....	2.15
MM	10 in.	20 in.	6¼ in.	8¾ in.	2½ in.	5 in.	.....	2.25

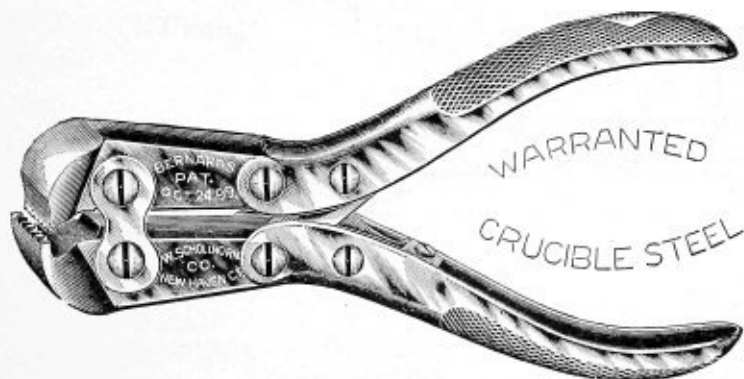
"BERNARD" END CUTTING NIPPERS.



Open Throat Jaws, Full Nickel Plated. Its Compound System of Leverage Makes this Tool a very Powerful Cutter.

No.	125A	125B	125C	125D	125E
Length, inches	4	5	6	7	8
Price, dozen	\$11.00	\$14.00	\$17.00	\$20.00	\$25.00
Will cut wires, inch.....	1/16	3/32	1/8	5/32	3/16

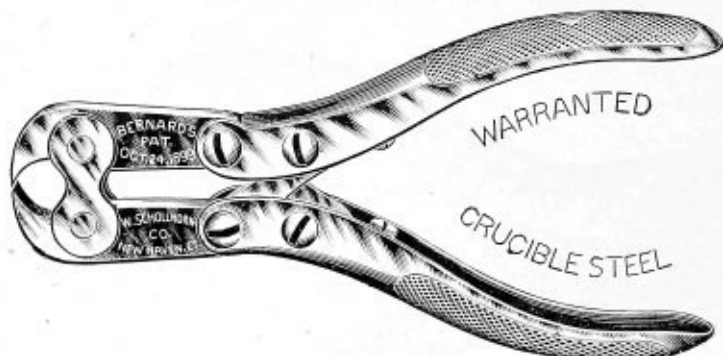
"BERNARD" MUSIC WIRE NIPPERS.



Especially Made for Cutting Hardened Steel, also Music Wire, and with Proper Care Should Last a Long Time. Full Nickel Plated.

No. 135. Length 5"..... \$18.00 dozen

"BERNARD" BICYCLE AND TYPEWRITER NIPPERS.



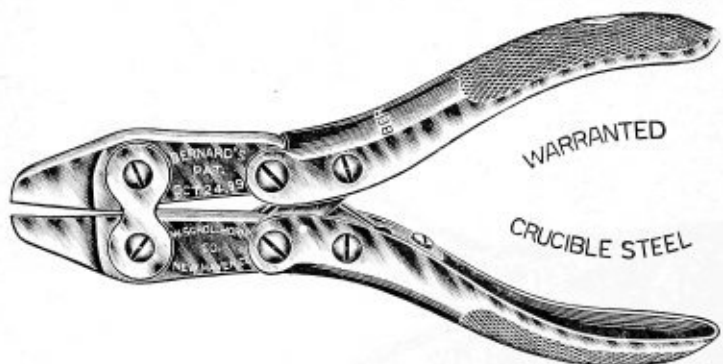
THIS
TOOL
WILL
NOT
CUT
TEMPERED
STEEL
WIRE.

FULL NICKEL PLATED.

Especially designed for cutting in small and narrow places. The Jaws are narrow and uniform in width from the cutting edges back to the handles.

No.	145A	145B
Size, inches	5	6
Price, per doz.	\$14.00	\$17.00

"BERNARD" DIAGONAL CUTTING NIPPERS.



THIS
TOOL
WILL
NOT
CUT
TEMPERED
STEEL
WIRE.

FULL NICKEL PLATED.

A powerful cutter, owing to its compound leverage.
Especially adapted for Jewelers', Opticians' and for Telephone and
Telegraph use.

No.	175A	175B	175C	175D
Size, inches	4½	5½	6½	7½
Price, per doz.	\$11.00	\$14.00	\$17.00	\$20.00
Will cut wires, diameter.	1/16	3/32	¼	3/16

CAREW'S PATENT NIPPERS.
MADE THROUGHOUT OF FORGED STEEL.



The adjustable jaws are made of the best tool steel, and are brought to a keen cutting edge before being tempered.

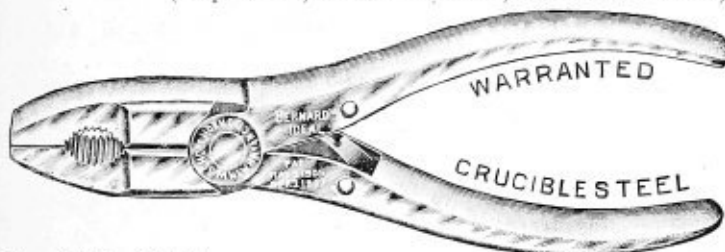
Whenever they become dulled by use, they can easily be removed by driving from the end showing prick-mark; ground, and as easily replaced. This may be repeated as often as expedient; or they can be replaced by duplicate jaws, thus obviating the necessity of purchasing new cutters.

No.	CUTTERS.	Each	No.	EXTRA JAWS.	Per pair
6.	6 inch.....	Price \$1.75	A	6 inch.....	Price \$0.50
8.	8 ".....	" 2.00	B	8 ".....	" .55
10.	10 ".....	" 2.25	C	10 ".....	" .60
12.	12 ".....	" 2.60	D	12 ".....	" .65
14.	14 ".....	" 3.00	E	14 ".....	" .70

BERNARD'S "IDEAL" PLIERS AND NIPPERS.

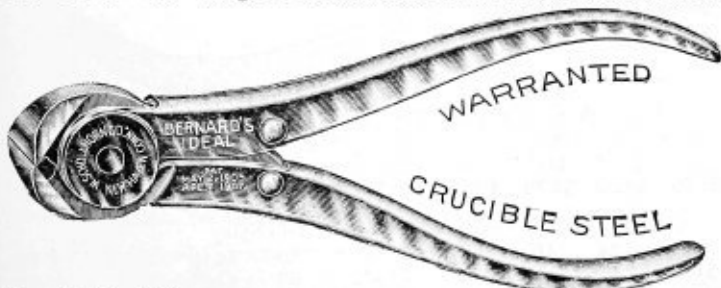
THESE ARE NEW TOOLS.

(Triple-Joint, Closed-in Handles, Full Nickel Plated.)



GAS AND
CUTTING
PLIERS
COMBINED.

No. 410-A	5½" long.....	\$11.00 dozen
No. 410-B	7½" long.....	14.00 dozen

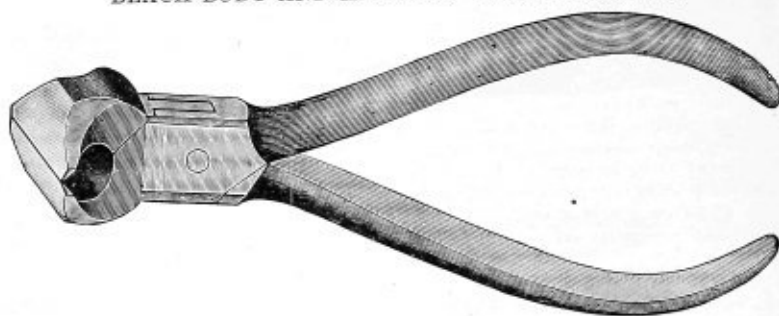


END
CUTTING
NIPPERS.

No. 425-C	3" long.....	\$ 9.50 dozen
" 425-D	4" long.....	10.00 "
" 425-E	5" long.....	11.00 "

Order by respective number and affix page number.

GENUINE FRENCH NIPPERS.
ALL STEEL—HAND FORGED.
FULLY WARRANTED.
BLACK BODY AND HANDLES—POLISHED JAWS.



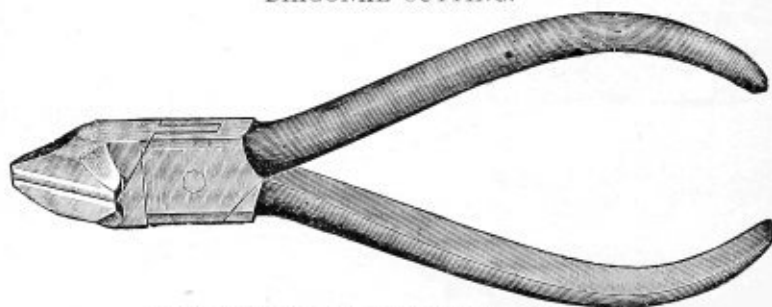
EXTRA QUALITY—END CUTTING.

No.	A	B	C	D	E	G	H	J	K	L
Length . . .	3"	3½"	4"	4½"	5"	5½"	6"	6½"	7"	8"
Dozen ..	\$8.00	\$8.00	\$8.00	\$8.75	\$9.50	\$10.75	\$12.00	\$14.00	\$16.50	\$19.50

GOOD QUALITY—END CUTTING.

No.	M	N	P	R	S	T	U	V	W	X
Length . . .	3"	3½"	4"	4½"	5"	5½"	6"	6½"	7"	8"
Dozen ..	\$7.00	\$7.00	\$7.00	\$7.75	\$8.50	\$9.75	\$11.00	\$13.00	\$15.50	\$18.50

DIAGONAL CUTTING.



EXTRA QUALITY—DIAGONAL CUTTING.

No.	3	3½	4	4½	5	5½	6	6½	7	8
Length . . .	3"	3½"	4"	4½"	5"	5½"	6"	6½"	7"	8"
Dozen ..	\$8.00	\$8.00	\$8.00	\$8.75	\$9.50	\$10.75	\$12.00	\$14.00	\$16.50	\$19.50

GOOD QUALITY—DIAGONAL CUTTING.

No.	33	34	35	36	37	38
Length . . .	3"	3½"	4"	4½"	5"	5½"
Dozen ..	\$7.00	\$7.00	\$7.00	\$7.75	\$8.50	\$9.25

Always write your order this way—viz., ½ dozen, No. 5½—404.

STARRETT'S ADJUSTABLE JAW CUT-NIPPER.

No. 1.

The jaws are detachable, so that they can be removed, ground and adjusted when they have become worn. Each jaw can be ground away to the extent of $\frac{1}{4}$ inch, remaining as good as new for practical use; and when used up, if ever, new jaws can be procured.

A screw through the jaw engages with a spline in the frame and draws the jaw firmly down to the toothed seat, holding it securely.

Another improved feature in this cut-nipper is a flat spring below the cutting edges and over the joint, forming a yielding seat for the end of the wire to press against while being cut. This obviates the danger of breaking the jaws—as often happens with other styles of cut-nippers which allow the wire to be inserted against a solid surface, thereby creating a pushing out strain on the jaws when they are pressed together.

The head and handles are of drop forged steel, finely finished. All the parts are case-hardened, except the jaws. These are made from a high grade of steel, nicely tempered. Those warranted to cut music wire have their cutting edges ground to a short steep bevel, while those for common use have their cutting edges ground more acute, work easier, and are preferable for cutting softer wire or for general use.



No.1.

The $5\frac{1}{2}$ inch nippers open $\frac{1}{8}$ inch, and the 7 inch open $\frac{5}{32}$ inch.

Prices.

No. 0.	$5\frac{1}{2}$ inch, M (for music wire).....	\$2.00
" 1.	$5\frac{1}{2}$ " C (for common use).....	2.00
" 2.	$5\frac{1}{2}$ " B (for bicycle use).....	2.00

Extras.

" 3.	7 inch, either M, C, or B.....	2.50
Extra jaws, either M, C, or B, which should be designated as above, per pair.....		.50
Screws for jaws, per dozen.....		.25
Splines for jaws, per dozen.....		.25



Unless otherwise ordered, Cut-Nippers with M jaws will be sent.
When ordering parts be sure to specify the part wanted, also what length of nipper the part is to fit.

GENUINE SWEDISH NIPPERS.

Carefully Made of the Best Materials.

Nicely Finished.



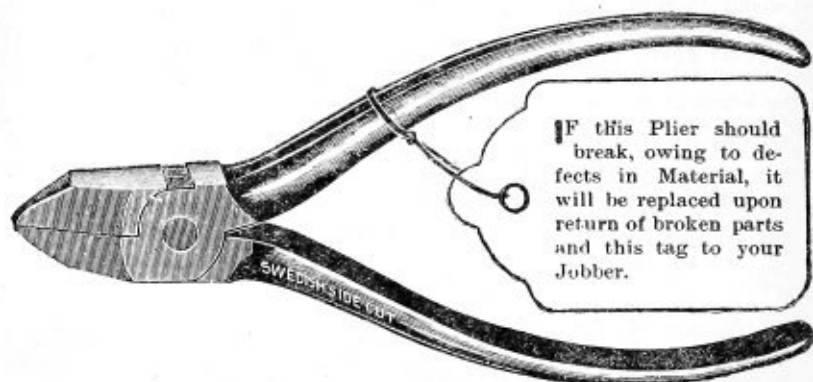
Swedish End Cutting Nipper.

Polished Handles.

No. A	3 in.....each,	\$0.55
" B	3½ in.....each,	.55
" C	4 in.....each,	.55
" D	4½ in.....each,	.60
" E	5 in.....each,	.65

Nickel Plated.

No. G	3 in.....each,	\$0.70
" H	3½ in.....each,	.70
" J	4 in.....each,	.70
" K	4½ in.....each,	.75
" L	5 in.....each,	.85



Swedish Side (Diagonal) Cutting Nipper.

Polished Handles.

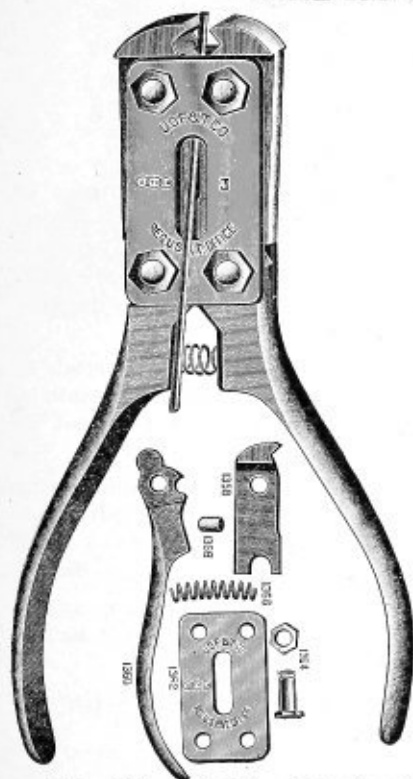
No. M	3 in.....each,	\$0.65
" N	3½ in.....each,	.65
" P	4 in.....each,	.65
" R	4½ in.....each,	.70
" S	5 in.....each,	.75

Nickel Plated.

No. T	3 in.....each,	\$0.80
" U	3½ in.....each,	.80
" V	4 in.....each,	.80
" W	4½ in.....each,	.85
" X	5 in.....each,	.90

Order this way—3 only No. D—406.

UTICA END CUTTING NIPPERS.



This is an entirely new designed tool, built upon the original Hall Pattern. The new construction makes this tool "The Best," "Handiest," and the easiest Cutting Compound Nipper on the market to-day. These nippers are not made to cut music wire, and we do not guarantee them for such use. They are, however, tempered for heavy work when same is done with care and good judgment.

The Utica finish is dark sky blue handles with polished plates, jaws and bolts.

The cutting capacity of the different nippers is as follows:

	5 1/2"	7 1/2"	9"
Will cut	1/8"	3/16"	1/4" wire.

However, in cutting wire of any length, if it has to pass through the plates, it will only cut as follows:

	5 1/2"	7 1/2"	9", will cut if wire is passed
between plates	3/32"	5/32"	7/32"

All Prices are Per Dozen.

Numbers	3.	\$22.00	No. 4.	\$27.00	No. 5.	\$32.00
No. 1358. Jaws	A	5.50	B	7.00	C	9.00
" 1360. Handles	D	5.50	E	7.00	G	9.00
" 1362. Plates	H	4.50	J	6.00	K	8.00
" 1364. Bolts and Nuts	L	2.00	M	2.00	N	2.00
" 1366. Springs	P	2.00	R	2.00	S	2.00
" 1368. Roller Bearing	T	1.00	U	1.00	V	1.00

Order by respective number and affix the page number.

LAFAYETTE WATCH AND CLOCK OIL.



We have given this oil the name of "Lafayette" as one of our Specialties. We do not place the name "Lafayette" on any article until we are fully satisfied that it is the very best of its kind that can be made.

This oil has been awarded medals in various European horological exhibits, and is positively guaranteed not to gum or blacken pivots.

Many of the most expert workmen of both Europe and America have used this oil for years in preference to all others, and pronounce it unexcelled.

Warranted to stand as low a temperature as any other oil and to be free from any bad odor.

Watch Oil No. "A."

Per Bottle	\$0.25
Dozen Bottles	2.75

Clock Oil No. "B."

Per Bottle	\$0.25
Dozen Bottles	2.75

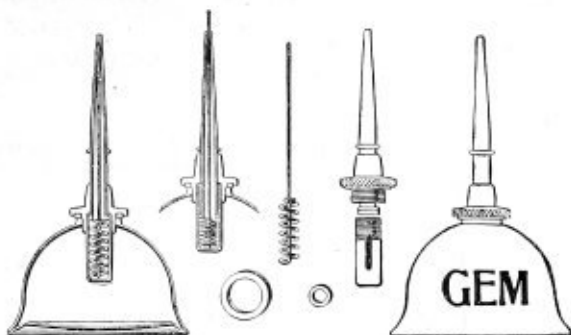
AMERICAN OIL & SUPPLY CO.,

Importers,

NEWARK, N. J.

Order through your jobber and insist on having "Lafayette."

GEM PATENT BRAZED STEEL BENCH OILERS.



THE BEST AND MOST SUBSTANTIALLY BUILT OILER ON THE MARKET.

It has a cleaning device that will keep the spout free from all obstructions.

It will always work.

It is an oil saver and time saver.

It is because it has the cleaning device.

It is the best and neatest made oiler.

It is made of highest quality of cold rolled low phosphorous steel.

It has a tempered spring steel bottom.

It is machine made in such manner as to develop the highest measure of strength.

It is spelter brazed.

It is interchangeable in all parts.

It is this feature that helps make it economical.

It can be readily repaired in case of accident.

It is to your interest to buy it.

The spout-cleaning device is securely covered by letters-patent. Infringements will be prosecuted.

BOTTOMS ARE MADE OF TEMPERED STEEL—THOROUGHLY BRAZED.



	Capacity.	Spout.	Diameter.	Per Doz.
No. 1204.	$\frac{1}{8}$ pint.....	4 inch.....	$3\frac{3}{8}$ inch.....	\$5.00
No. 1206.	$\frac{1}{8}$ pint.....	6 inch.....	$3\frac{3}{8}$ inch.....	5.50
No. 1209.	$\frac{1}{8}$ pint.....	9 inch.....	$3\frac{3}{8}$ inch.....	6.00
No. 1304.	$\frac{1}{2}$ pint.....	4 inch.....	$3\frac{3}{4}$ inch.....	6.00
No. 1306.	$\frac{1}{2}$ pint.....	6 inch.....	$3\frac{3}{4}$ inch.....	6.50
No. 1309.	$\frac{1}{2}$ pint.....	9 inch.....	$3\frac{3}{4}$ inch.....	7.00
No. 1404.	$\frac{3}{4}$ pint.....	4 inch.....	$4\frac{1}{8}$ inch.....	7.00
No. 1406.	$\frac{3}{4}$ pint.....	6 inch.....	$4\frac{1}{8}$ inch.....	7.50
No. 1409.	$\frac{3}{4}$ pint.....	9 inch.....	$4\frac{1}{8}$ inch.....	8.00
No. 1504.	1 pint.....	4 inch.....	$4\frac{1}{2}$ inch.....	8.00
No. 1506.	1 pint.....	6 inch.....	$4\frac{1}{2}$ inch.....	8.50
No. 1509.	1 pint.....	9 inch.....	$4\frac{1}{2}$ inch.....	9.00

The 6 and 9 inch spouts are furnished bent unless otherwise ordered.

Oilers made of No. 20 B. & S. gauge cold rolled steel. All highly polished. **Guaranteed.**

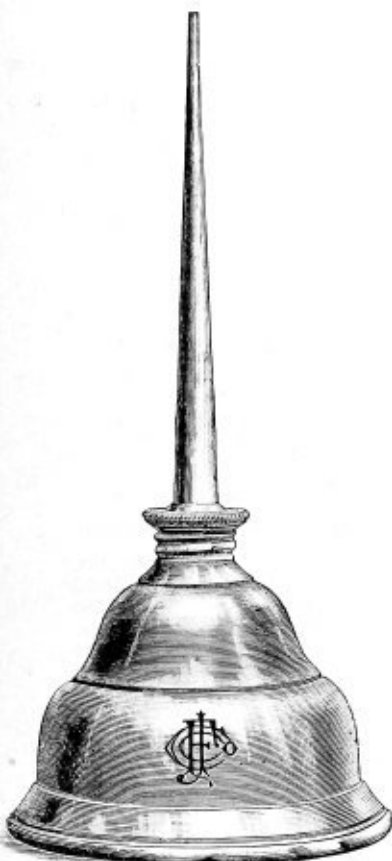
Bushings of solid brass castings, machine cut.

Leather washers are cut from split sides.

Always affix page number to the item number **WHEN ORDERING**—viz.,
 $\frac{1}{2}$ Dozen No. 1404—409.

CHACE'S PATENT OILERS.

ZINC AND BRASS.



DIMENSIONS.

Trade No.	Dia. of Bottom.	Height of Body.	Length of Spout from Top of Spout Screw.	Opening in Spout.
00	2 1/32	1 1/2	2 3/16	1/32
0	2 3/16	1 3/4	2 3/16	1/32
1	2 5/8	2 1/16	2 3/16	1/32
1 1/2	2 7/8	2 7/16	3	3/64
2	3 9/32	2 3/4	4 3/16	3/64
3	2 23/32	2 3/8	4 3/16	3/64
4	4 3/32	3 5/16	4 7/8	1/16
5	4 7/8	3 9/16	4 7/8	1/16
6	4 3/4	3 3/4	4 7/8	1/16

ZINC OILERS.

Tin Bottoms and Spouts.			Brass Bottoms Tin Spouts.		Brass Bottoms, and Spouts.	
Tde.	Stk.	Price	Stock	Price	Stock	Price
No.	No.	per doz.	No.	per doz.	No.	per doz.
00	31...	\$1.00	58.....	\$1.25	40.....	\$2.00
0	32...	1.25	59.....	1.50	41.....	2.25
1	33...	1.50	60.....	1.75	42.....	2.50
1 1/2	34...	1.75	61.....	2.00	43.....	3.00
2	35...	2.00	62.....	2.50	44.....	3.50
3	36...	2.25	63.....	3.00	45.....	4.00
4	37...	2.75	64.....	3.50	46.....	4.75
5	38...	3.50	65.....	4.50	47.....	6.00
6	39...	4.50	66.....	5.50	48.....	7.50

Note—Be sure to order by TRADE NUMBER and avoid error.

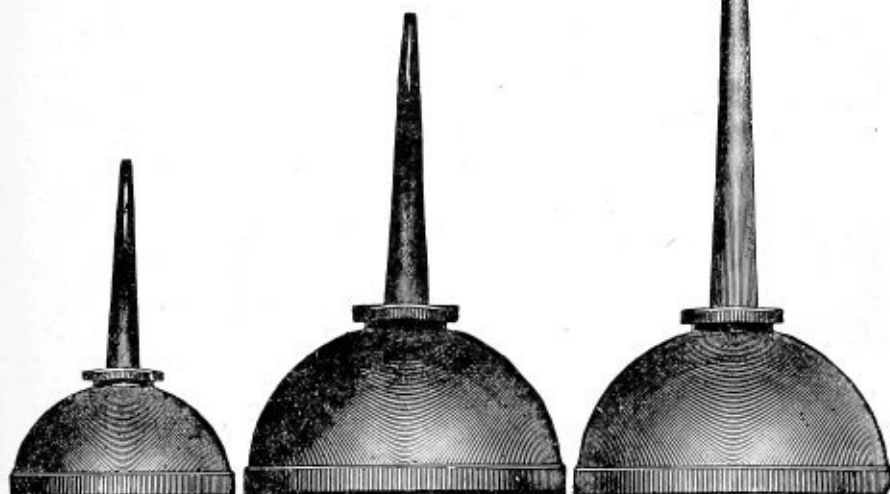
1 Dozen, No. 2—410.

This helps us to fill your order and also helps you to check your invoice.

COPPER PLATED STEEL OILERS.

These Oilers, we claim, are the best manufactured in the country, and are used by the leading tool makers, machinists and railroads.

Heavily copper plated inside. The outside perfectly resembles 14-carat gold.



No. 12

No. 13

No. 14

							Dozen
No. 12	Steel Oiler,	3 oz.,	2 $\frac{3}{4}$ in. diam.,	2 $\frac{1}{2}$ in. nozzle	.....		\$4.50
" 13	" "	5 "	3 $\frac{3}{8}$ in. "	3 in. "	.....		5.50
" 13A	" "	5 "	3 $\frac{3}{8}$ in. "	5 in. "	.....		6.00
" 14	" "	5 "	3 $\frac{3}{8}$ in. "	9 in. "	.....		6.50
" 14A	" "	$\frac{1}{2}$ pt.,	3 $\frac{3}{4}$ in. "	3 in. "	.....		7.50
" 14AA	" "	$\frac{1}{2}$ "	3 $\frac{3}{4}$ in. "	5 in. "	.....		8.00
" 14B	" "	$\frac{1}{2}$ "	3 $\frac{3}{4}$ in. "	9 in. "	.....		8.50
" 15	" "	1 "	4 $\frac{1}{4}$ in. "	3 in. "	.....		9.25
" 15A	" "	1 "	4 $\frac{1}{4}$ in. "	5 in. "	.....		9.75
" 16	" "	1 "	4 $\frac{1}{4}$ in. "	9 in. "	.....		10.50

Please order by number and thus avoid mistakes. Order this way: $\frac{1}{2}$ Doz., No. 15A—411. The first number tells us the item wanted. The second number tells us on which page the item is to be found.

ARKANSAS OILSTONES.

ROUND
FILES.

All prices are for assorted lengths only.

	Hard.	Soft.
3 to 4½ in. long x ¼ to 5/16 in. ....per dozen,	\$8.00	\$6.00

FLAT
FILES.

	Hard.	Soft.
3 to 4½ x ¾ to ½ x ¼ to 3/16 in....per dozen	\$4.00	\$3.00

BEVEL
FILES.

	Hard.	Soft.
3 to 4½ in. long x ½ to ¼ in. thick....per dozen	\$4.50	\$3.40

TRIANGULAR
FILES.

		Hard.	Soft.
3 to 4½ in. long x ¼ to 5/16 in. face	per dozen,	\$5.00	\$3.75
3 to 4½ " " x ¾ " " "	"	5.50	4.00
3 to 4½ " " x ½ " " "	"	6.00	4.50
4½ to 5½ " " x ⅝ " " "	per pound,	7.00	5.25
4½ to 5½ " " x ¾ " " "	"	6.00	4.50
4½ to 5½ " " x 1 " " "	"	5.00	3.75

DIAMOND
FILES.

Assorted, 3 to 4½ in. long to ¾ to 5/16 in....per dozen, **\$6.00** **\$4.50**
 All above shapes and sizes respectively 40 per cent
 less than Hard Arkansas lists.

Order with care and avoid error.

ARKANSAS OILSTONES.



POINTS

Assorted, $2\frac{1}{2}$ to 4 in. long....per dozen, Hard. Soft.
\$4.00 \$3.00

NEEDLE
PIECES.

About 2 to $2\frac{1}{2}$ x $\frac{1}{2}$ to 1 x $\frac{1}{8}$ to $\frac{1}{4}$ in....per hundred Hard. Soft.
\$16.00 \$12.00

KNIFE
BLADES.

3 to $4\frac{1}{2}$ x $\frac{3}{4}$ to 1 x $\frac{1}{8}$ to $\frac{1}{4}$ in. back, sharp edge....per dozen, Hard. Soft.
\$6.00 \$4.50

SQUARE
FILES.

Assorted, 3 to $4\frac{1}{2}$ in. long x $\frac{1}{4}$ to $\frac{3}{8}$ in. sq. ....per dozen,		Hard. \$3.50	Soft. \$2.60
3	to $4\frac{1}{2}$ x $\frac{1}{4}$	3.50	3.00
3	to $4\frac{1}{2}$ x $\frac{1}{8}$ to $3/16$	4.00	3.00
3	to $4\frac{1}{2}$ in. long x $5/16$	4.00	3.00
3	to $4\frac{1}{2}$ in. long x $3/8$ in.	4.50	3.40
2	to $4\frac{1}{2}$ in. long x $1/2$ in.	per pound, 6.00	4.50
$4\frac{1}{2}$	to $5\frac{1}{2}$ in. long x $5/8$ in.	5.50	4.00
$4\frac{1}{2}$	to $5\frac{1}{2}$ in. long x $3/4$ in.	5.00	3.75
$4\frac{1}{2}$	to $5\frac{1}{2}$ in. long x 1 in.	4.50	3.40

Note { All above shapes and sizes respectively
Washita. { 40 per cent less than Hard Arkansas lists.

When ordering give page number SURE.

ARKANSAS AND WASHITA OILSTONES.



ARKANSAS PEN-KNIFE PIECES.

		Hard.	Soft.
No. 1, 3 to 4½ x 1 to 1¼ x ⅝ to ⅞ in.	per pound,	\$4.00	\$2.50
No. 1, 3 to 4½ x 1 to 1¼ x ⅝ to ⅞ in.	per dozen,	8.00	5.00
No. 2, assorted sizes	per pound,	2.00	1.00
No. 2, assorted sizes	per dozen,	4.00	2.00

PEN-KNIFE PIECES.

Lily White, 3 to 5 x 1 to 1¼ x ¼ to ⅝ in.	per pound,	\$0.90
No. 1, Washita, 3 to 5 x 1 to 1¼ x ¼ to ⅝ in.	per pound,	.70
No. 1, " 3 to 5 x 1 to 1¼ x ¼ to ⅝ in.	per dozen,	1.50



ARKANSAS ROUND EDGE SLIPS.

	Hard.	Soft.
No. 1, reg., 3 to 5 x 1¼ to 2 x ⅝ to ⅞ in. back x ⅝ to ¾ in. edge	per pound,	\$4.00
No. 1, small, 3 to 5 x 1¼ to 1½ x ¼ to ⅝ in. back x ⅝ in. to sharp edge	per pound,	6.00
No. 2, assorted sizes	per pound,	2.50
		4.00
		1.00

WASHITA ROUND EDGE SLIPS.

About 3 to 5 x 1¾ to 2 x ⅝ to ⅞ back x ⅝ to 5-16 in. edge.

Lily White	per pound,	\$.90
Per dozen, \$2.35 in ¼ dozen cartons.		
Rosy Red	per pound,	.90
Extra	per pound,	.80
No. 1	per pound,	.70
No. 2	per pound,	.40

Specify exactly what is wanted and do not fail to give page number.

ARKANSAS OILSTONES.

REGULAR
BENCH
STONE.

Asst. Quality	Length.	Width.	Thickness.	Price per lb.	
				Hard.	Soft.
A Ex. Selected,	3 to 5½	x 1¾ to 2	x ¾ to 1 in.	\$3.25	\$1.75
B Ex. Selected,	5½ to 8	x 1¾ to 2	x ¾ to 1 in.	4.50	2.25
C Ex. Selected,	8 to 12	x 1¾ to 2	x ¾ to 1 in.	5.00	2.50
A No. 1,	3 to 5½	x 1¾ to 2	x ¾ to 1 in.	2.80	1.50
B No. 1,	5½ to 8	x 1¾ to 2	x ¾ to 1 in.	3.50	1.70
C No. 1,	8 to 12	x 1¾ to 2	x ¾ to 1 in.	4.00	1.90
D No. 2,	3 to 5½	x 1¾ to 2	x ¾ to 1 in.	1.00	.50
E No. 2,	5½ to 8	x 1¾ to 2	x ¾ to 1 in.	1.50	.70

JEWELERS'
BENCH
STONE.

Asst. Quality	Length.	Width.	Thickness.	Price per lb.	
				Hard.	Soft.
W Ex. Selected,	5 to 5½	x 1¾ to 2	x ¾ to ¾ in.	\$4.00	\$2.50
X No. 1,	5 to 5½	x 1¾ to 2	x ¾ to ¾ in.	3.40	2.00
Y No. 2,	5 to 5½	x 1¾ to 2	x ¾ to ¾ in.	2.00	1.00

The Hard Arkansas Oilstone is the best sharpening stone known for engravers, watchmakers, surgeons, dentists and others who use very fine edge tools. It is composed of pure silica, crystallized in a manner similar to the Washita, the crystals being much smaller, harder and more transparent. It is also more compact than the Washita, has an exceedingly sharp grit, and will both cut and polish very hard metals.

The Soft Arkansas Oilstone is a grade between the Hard Arkansas and the Washita stone. It is not quite so fine grained nor as hard as the regular Hard Arkansas; but it cuts faster and is better for some kinds of work.

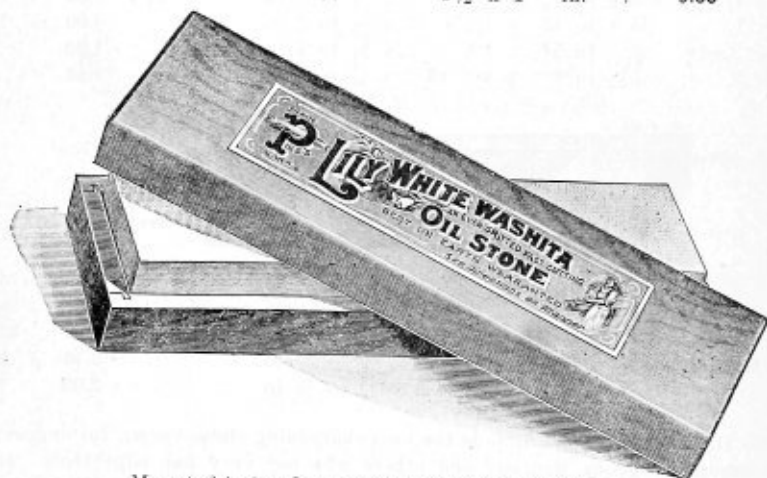
A little care in writing orders will help us both.

ARKANSAS OILSTONES, MOUNTED.
Mounted in Polished Mahogany Boxes.



Prices are per dozen.

Sizes.	Hard.	Soft.	Sizes.	Hard.	Soft.
8 x 2 in.	\$40.00	\$24.00	5 x 2 in.	\$24.00	\$15.00
7 x 2 in.	36.00	20.00	4 x 1½ in.	14.00	10.00
6 x 2 in.	30.00	18.00	3½ x 1 in.	9.00	7.00



Mounted in handsomely polished hard-wood boxes.


Prices are per dozen.

Lily White and No. 1. Rosy Red.			Lily White and No. 1. Rosy Red.		
Sizes.			Sizes.		
10 x 2 in.	\$16.00	\$18.00	6 x 2 in.	\$10.00	\$11.50
9 x 2 in.	14.00	16.00	5 x 2 in.	9.00	10.00
8 x 2 in.	12.00	14.00	4 x 1½ in.	7.00	9.00
7 x 2 in.	11.00	13.00	3½ x 1 in.	5.50	6.00

Always be sure to affix page number to every item ordered. Then we can't go wrong.

INDIA OIL STONE WHEELS.

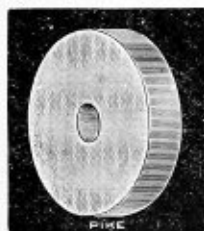
These are of the same texture and material as the regular India Oil Stone. They are made in the same variety of grades, and are used for the same purposes as those made from natural stones, such as Washita and Arkansas.



Diam. Inches.	$\frac{1}{4}$ "	$\frac{1}{2}$ "	$\frac{3}{4}$ "	1"	$1\frac{1}{2}$ "	2"
1	\$0.50	\$0.60	\$0.70	\$0.80	\$1.00	\$1.20
$1\frac{1}{2}$	.60	.80	.90	1.00	1.20	1.40
2	.70	1.00	1.20	1.40	1.60	1.80
$2\frac{1}{2}$	.80	1.20	1.40	1.60	1.80	2.10
3	1.00	1.40	1.70	2.00	2.30	2.50
$3\frac{1}{2}$	1.20	1.60	2.00	2.40	2.75	3.00
4	1.40	1.80	2.20	2.60	3.00	3.40
$4\frac{1}{2}$	1.60	2.00	2.40	2.80	3.20	3.70
5	1.80	2.20	2.60	3.00	3.40	3.90
6	2.10	2.50	2.90	3.20	3.60	4.20
7		3.25	4.00	4.75	5.75	7.25
8		3.90	4.50	5.60	7.00	9.00
9		4.60	5.35	6.75	8.90	12.00
10		5.50	6.25	7.75	10.40	14.00
12		7.00	8.50	11.00	15.00	17.50

When ordering be sure to specify whether you want coarse grit, medium grit or fine grit.

Any size between diameters shown above to take price of next larger diameter. Any size between thicknesses to take next greater thickness.



ARKANSAS OIL STONE WHEELS.

There are many cases where this kind of wheel is needed.

	Hard. Arkansas.	Soft. Arkansas.
Wheels, $1\frac{1}{2}$ to 4 in. diam., $\frac{1}{4}$ to $\frac{1}{2}$ in. thick, $\frac{1}{4}$ to $\frac{1}{2}$ in. hole, per inch	\$2.00	\$1.50
Smaller or larger sizes, special price.		



WASHITA OIL STONE WHEELS.

$1\frac{1}{2}$ to 5 in. diameter, $\frac{3}{8}$ to $\frac{3}{4}$ in. thick, $\frac{1}{4}$ to $\frac{1}{2}$ in. hole,

per in., \$.80

Smaller or larger sizes, special prices.

Our New System of writing orders is a big help to us both.

INDIA OIL STONES. MOUNTED IN POLISHED WOOD CASES.



Shape	Dimensions of stone	Prices each incl'dg box	
		Coarse, Me-	dium or Fine
A0	8x2 x1	.....	\$1.25
A1	8x1½ x1¼	.....	1.25
A1½	7x2 x1	.....	1.00
A2	6x1½ x ¾	.....	.75
A3	4x1 x ½	.....	.55
A29	6x2 x1	.....	.85

Extra wood boxes, 25c each.

Specify size of stone you want the box for.

MOUNTED IN IRON BOXES.

The above boxes are fitted with four cork feet which will to a great extent prevent them from sliding on bench while in use.

The stone rests on a piece of felt in bottom of box, which, absorbing a quantity of oil, keeps the stone moist.



Shape	Dimensions of stone	Prices each incl'dg box	
		Coarse, Me-	dium or Fine
B0	8x2 x1	....	\$1.35
B1½	7x2 x1	....	1.10
B2	6x1½ x ¾	....	.85
B29	6x2 x1	....	.95

Extra Iron Boxes, 35c each.

Specify size of stone you want box for.

COMBINATION STONE.



The Coarse side can be used for sharpening dull tools or on tools where fast work is required without regard to fine finish, while the Medium side can be used when a finer edge is required, or for finishing after the coarse side has been used.

Shape	Dimensions of stone	Price in paper boxes	Mounted in	
			wood boxes	iron boxes
C0	8 x2 x1	\$1.25	\$1.50	\$1.60
C1	8 x1½ x1¼	1.25	1.50	....
C1½	7 x2 x1	1.00	1.25	1.35
C2	6 x1½ x ¾	.60	.85	.95
C24	4½ x1½ x 5/8	.50	....	....
C29	6 x2 x1	.75	1.00	1.10

When ordering BE SURE to affix page number to item number, viz.:

1 only, B2-418.

INDIA OIL STONES.

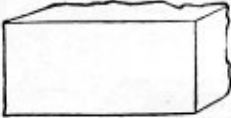






The **Fine** stone is fast cutting and close grained, leaving a smooth, keen edge on the hardest and finest of steel tools.

The **Medium** stone, though coarser in grain than the **Fine** stone, makes a good working edge on all ordinary tools in every-day practice.

The **Coarse** stones are adapted for the rough work where fast cutting is required without regard to finish, also for rubbing stones.

Every stone is sold subject to the following guarantee:

"IF THIS ARTICLE SHOULD PROVE IN ANY RESPECT UNSATISFACTORY, WE AGREE TO EXCHANGE OR REFUND THE FULL PRICE PAID FOR SAME."

	Shape No.	Dimensions	Prices each coarse, medium or fine
	0	8 x2 x1	\$1.00
	1	8 x1 3/4 x1 1/4	1.00
	1 1/2	7 x2 x1	.75
	29	6 x2 x1	.60
	2	6 x1 5/8 x 3/4	.50
	24	4 1/2 x1 1/2 x 5/8	.40
	3	4 x1 x 1/2	.30
	40	2 x1 x 1/4	.30
	30	6 x 3/8 x 3/8	.45
	31	6 x 1/2 x 1/2	.45
	32	6 x 5/8 x 5/8	.45
	33	6 x 3/4 x 3/4	.55
	34	6 x1 x1	.55
	4	4 x 1/2 x 1/2	.30
	5	4 x 3/8 x 3/8	.30
	6	4 x 1/4 x 1/4	.30
	7	4 x 1/2 x 1/2	.40
	8	4 x 3/8 x 3/8	.40
	9	4 x 1/4 x 1/4	.40
	10	4 x 1/2	.45
	11	4 x 3/8	.45
	12	4 x 1/4	.45
	22 1/2	6 x2 1/4 x3/4 x3/8	.60
	22	4 1/2 x2 1/8 x5/8 /5-16	.50
	13	4 1/2 x1 3/4 x1 1/2 /3-16	.35
	14	4 1/2 x1 3/4 x3/8 /1/8	.35
	15	4 1/2 x1 3/4 x1/4 /1-16	.35
	27	3x5/16	\$0.50
	28	4x1x1/8	\$0.50

Write your orders this way—PLEASE:

Viz.: 1/2 doz. No. 8—419.

WASHITA OILSTONES.



This stone is medium hard fine grit. It is perfectly white, of uniform texture, free from foreign substances.

Approximate size, $6 \times 1\frac{1}{2} \times \frac{3}{4}$ " to 1" }\$0.60 per lb.
 " " 8x2x1" }



This stone is tinted or streaked more or less with a pinkish orange or dull red color, and has an even, porous grit, somewhat coarser than the Lily White.

Approximate size, $6 \times 1\frac{1}{2} \times \frac{3}{4}$ " to 1" }\$0.60 per lb.
 " " 8x2x1" }



EXTRA WASHITA is a little harder than the Lily White. For use where a very fine, smooth edge is preferred to a quick cut edge.

Sizes same as above.....\$0.50 per lb.

No. 1 Washita is a good oilstone for common use. It is not absolutely uniform in texture. Sizes same as above—\$0.40 per lb.

Washita—A. B. Grade.....\$0.30 per lb.

No. 2 Washita.....0.25 " "

All stones are selected—Quality makes price.

OILSTONES.



WASHITA PLUGS.

About 1 inch diameter at large end, and tapering to $\frac{1}{4}$ inch at small end, especially adapted for sharpening beveled gouges, moulding planes, bits, etc.

No. A	Gouge Stones or Plugs, oval.....	per dozen, \$5.00
" B	" " " " " round.....	per dozen, 4.50



ARKANSAS OILSTONE PENCIL FOR ENGRAVERS.

A most convenient tool for engravers and watchmakers. Consists of an Arkansas File, $\frac{1}{8}$ in. square, in wood handle.

No. C	Price.....	per dozen, \$5.00
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CARVING TOOL SLIPS.

No. D	Per set of 4 pieces.....	\$1.00
	Each set packed in a paper box.	

Please order by our new system. It is a great help to us both, viz.:

$\frac{1}{2}$ Doz., No. C—421.

This specifies exactly the item wanted, also the page on which it is to be found—invaluable when checking bills.

ACID PICKLE PANS.**THE OLD STYLE.**

These pans are hand forged from heavy sheet copper. Best quality.

We carry a complete stock with flat, also round bottoms. The illustration shows a flat bottom pan.

The handle is forged copper—socket in shape, securely riv-

eted to the V-shaped stem of the pan. The socket admits of inserting a round wood handle.

FLAT BOTTOM PANS.

Numbers	41	42	43	44	45	46	47	48	49
Sizes	3"	3½"	4"	4½"	5"	5½"	6"	7"	8"
Weight, lbs., approx.....	¾	1	1¼	1½	2	2½	2¾	4¼	6

ROUND BOTTOM PANS.

Numbers	50	51	52	53	54	55	56	57	58
Sizes	3"	3½"	4"	4½"	5"	5½"	6"	7"	8"

Weight approximately same as respective sizes above.

Note—All weights include the socket-shaped handle that is riveted to the pan. All shapes and sizes.....70c per lb.

When writing orders use our new system, then we cannot err, and when you get your bill you can check it in one-tenth the time. Order viz.:

½ Doz., No. 45—422.

LAFAYETTE

ACID PICKLE PANS.

New Style, Hand Forged of Heavy Sheet Copper, Best Quality.



Made in one solid piece. This illustration represents our Flat Bottom Pans. The edges are rounded, but the bottom is flat. An advantageous feature for many uses.

Flat Bottom—Numbers, Sizes and Weights.

Numbers	A	B	C	D	E	G	H	J	K
Sizes	3 in.	3½ in.	4 in.	4½ in.	5 in.	5½ in.	6 in.	7 in.	8 in.
Lbs., Appr'x.	½	¾	1	1¼	1½	2	2½	3¾	5¼

Round Bottom—Numbers, Sizes and Weights.

Numbers	L	M	N	P	R	S	T	U	V
Sizes	3 in.	3½ in.	4 in.	4½ in.	5 in.	5½ in.	6 in.	7 in.	8 in.

Weights same as for Flat Bottom Pans.

Round Bottom Pans are half spheres. Can not set upright.



This illustration shows pan with wrought iron handle attached. Weights same as given above, handle not included.

Flat Bottom—With Handle Attached.

Numbers	1	2	3	4	5	6	7	8	9
Sizes	3 in.	3½ in.	4 in.	4½ in.	5 in.	5½ in.	6 in.	7 in.	8 in.

Round Bottom—With Handle Attached.

Numbers	24	25	26	27	28	29	30	31	32
Sizes	3 in.	3½ in.	4 in.	4½ in.	5 in.	5½ in.	6 in.	7 in.	8 in.

Prices for all of the above Pans only, 70c per lb., 25c net extra additional for each pan having handle attached.

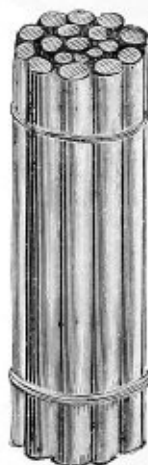
Extra handles not attached, 25c each net.

PEGWOOD AND PITH.**PITKIN'S ANTIBREAK PEGWOOD.**

Per box.

No. "A," Watch size, $\frac{1}{2}$ gross in a box . **\$0.25**No. "B," Clock size, $\frac{1}{2}$ gross in a box . **.25**

"Pegwood"
In Bundles.



"Pith"
In Bundles.

No.
"G," Per bundle . **\$0.05**
"H," Per doz. bdl., **.50**

Pegwood in Bundles.

	Per Bundle.	Per Doz. Bdl.
Small size, $5\frac{3}{4}$ in.	No. J \$0.05	No. M \$0.50
Medium size, $6\frac{1}{2}$ in.	No. K .10	No. N .75
Large size, 8 in.	No. L .15	No. P 1.00

Every item in this catalog should be ordered viz.: 1 doz. No. 4—424; or 3 boxes No. B—424. By this method you can't err.

PLATING DYNAMOTORS.

For Gold, Silver, Nickel and Copper Plating, etc.

A Plating Dynamo and Power Motor combined in one, self-operated by any Direct Current, Light or Power Circuit. (No motor, belts or pulleys required.) Fully warranted.

For Direct Current only—Wound to run on
110, 220 and 550 volt circuits.

Will deliver to the tank a 4 to 10 volt current for plating, exactly like the regular Plating Dynamos.

Cost to run, 1 to 5 cents per day, according to size.

Type and size of Dynamotor	Plating End Output in Amperes at 4 to 10 Volts	Amount of Gold in Dwts. deposited per hour.	Capacity of Silver in Quarts	Capacity of Silver in Square feet per hour	Capacity of Nickel in Gallons	Capacity of Brass and Copper in Gallons	Approximate Shipping Weight in pounds.	Net Price 110 Voltage For 220 voltage add 10%; 500 voltage add 20%	Net Price of Current Regulator (not always required)
No. 17A	1 to 5	6	60	3½	55	30	70	\$39.00	\$10.00
" 17B	2 to 10	11	120	6½	90	50	110	56.00	11.00
" 17C	3 to 15	15	160	9	160	85	130	80.00	12.00
" 17D	4 to 25	25	220	15	275	200	225	90.00	13.00

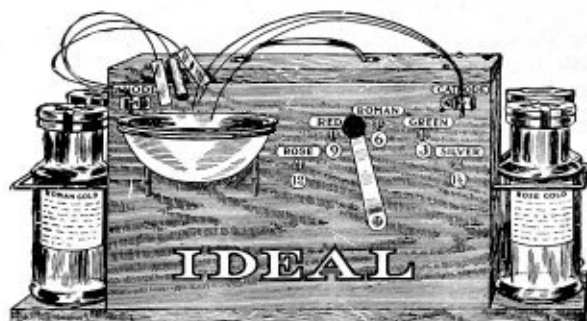
PLATING DYNAMOS.

For Gold, Silver, Nickel, Copper, Etc.

Type of Dynamo	Output in Amperes at 2 to 8 volts	Amount of Gold in Dwts. per hour.	Capacity of Silver in Quarts	Capacity of Nickel in Gallons	Capacity of Brass and Copper in Gallons	Horse-power required to drive dynamo.	Approximate Shipping wgt. in pounds	Net Price	Net Price of Current regulator
No. 18	8	6	30	40	15	1/8	18	\$13.50	\$.....
" 16A	10	10	100	90	50	1/6	50	25.00	10.50
" 16B	20	18	200	150	90	1/5	70	32.00	11.50
" 16C	30	30	280	280	150	1/4	100	54.00	13.00
" 16D	60	50	360	500	350	1/2	150	69.00	14.00

The above Dynamos are made according to requirements, from 4 to 10 volts; 6 to 100 amperes. Will deposit, corresponding to size, 3 to 100 dwts. of gold per hour; silver, nickel and copper in accordance. Cost to run, 1 to 5 cents per day, according to size. Dynamos Types 16A to 16D include pulley and arrangement for belt tightening.

IDEAL PLATING MACHINE.



Patented May 19, 1908.

Price, \$15.00 net.

Sold with a positive guarantee not only that it will do what we claim but that you can do it.

Formulae for Solutions: Rose, Roman, Red and Green, Gold, Silver, Copper and Nickel, and full directions for plating these colors packed with each machine.

The only machine furnishing five different strengths of current; five shades of color for each solution.

Simple, practical and indispensable, always ready, clean, compact, sure in results, the ideal machine for the jeweler.

An electro-plating machine that any one can use. Just the thing to put the new finishes on your old goods. Plates Roman, Red, Rose, Green, Silver, Copper and Nickel.

Batteries are ordinary dry cell and give $1\frac{1}{2}$, 3, 6, 9 and 12 volts current (see cut), and should last a year or more with ordinary use and can easily be replaced.

Construction is good; material of oak, woodwork nicely finished. Lever and attachments nickel plated. Jars for solutions hold 12 ounces and are self-sealing. Plating tank or bowl of best enamel ware. One each pure gold, pure silver and carbon anode. Connecting wires complete, ready for use.

Weight, 30 pounds crated. Size, 18 inches long, 9 inches high and $6\frac{1}{2}$ inches wide.

Trade **KALYE** Mark

**The Universal Cleaner for Gold, Silver and Brass Workers, Gilders,
Nickel Platers, Etc.**

Used wherever a metal needs a chemically clean surface for plating or lacquering.

An acknowledged fact. Successful results in the electro deposition of metals are primarily due to an absolutely **chemically clean metallic surface** and that the true union between the deposited metal and its base cannot be successful unless this is accomplished.

Kalye does not saponify oil or grease.

Kalye deposits all polishing material or organic substance on the bottom of the tank.

Kalye obviates the necessity of using any other substance, fulfilling all needs in the cleansing of metal surfaces, thereby avoiding the use of all alkalies, plater's compounds, fish soap and other substances.

The **peeling of nickel deposits** is oftentimes a source of annoyance and no electro deposit needs greater care in the preparation of the base metal than those for deposit of nickel.

Kalye can also be used with more successful results in cleaning finished silver or plated goods that are **usually lacquered** in endless variety, preventing the peeling of the lacquer from the highly-polished surface as often occurs when soaps are used in the final cleansing, leaving a surface upon which the lacquer will **cling without danger of cracking**, thereby producing a perfectly protected surface against oxidation by use or by atmospheric conditions.

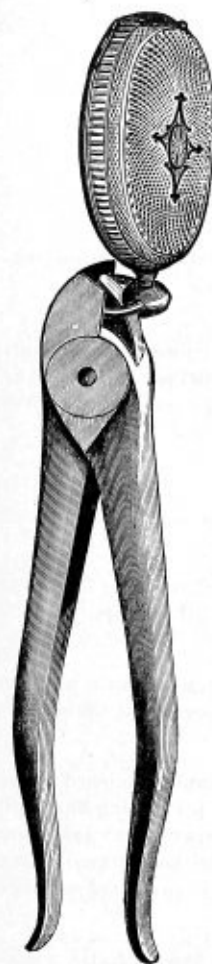
A Burnishing Fluid. Burnishers by hand or machine will find in Kalye a substitute for all burnishing soaps, producing a better lustre for their labor without the least oxidation of the surface.

Lubricate your burnishing tools with **Kalye** in place of soap.

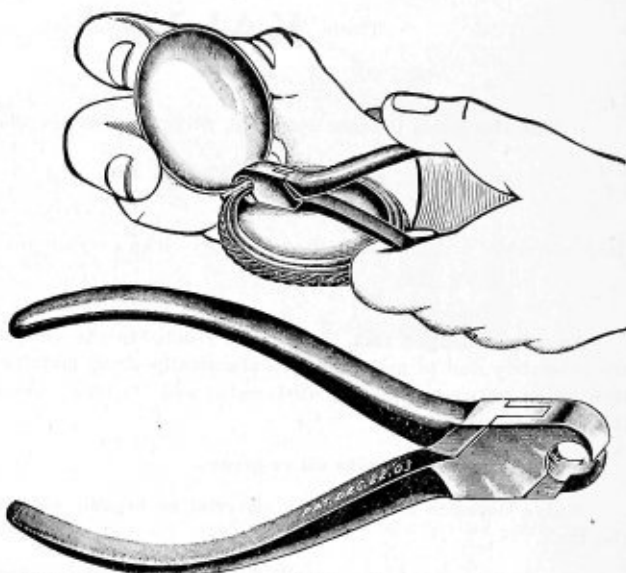
Kalye can be used upon all metals except aluminum, upon which a slight action takes place.

Packed in 25 lb. screw-top cans. Price, \$

PLIERS.



No. "B."



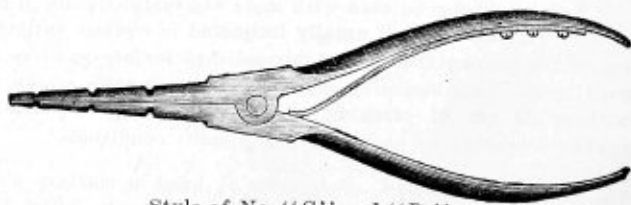
Watch Cap Straightening Pliers, for Repairing Sprung Case Joints.

No. "A"	Each, \$1.25
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Pendant Bow Closing Pliers.

No. "B"	Each, \$0.75
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PENDANT BOW EXPANDING PLIER.



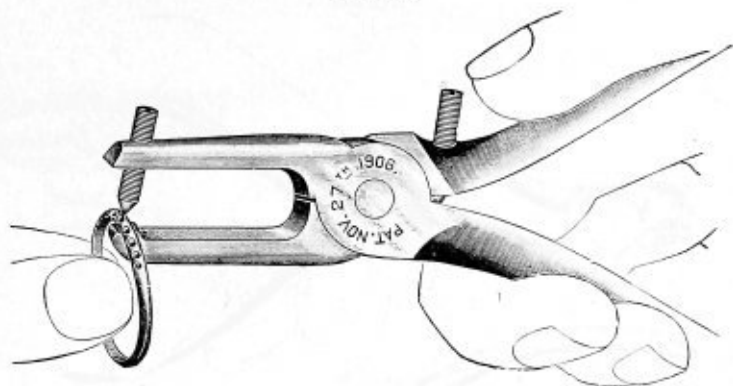
Style of No. "C" and "D."

No. "C," Bright	Each, \$0.35
No. "D," Nickeled	Each, .50

Order by respective number and be sure to affix page number, viz.:

1 only, No. B—428.

PLIERS.



No. J Pearl Setting Plier.

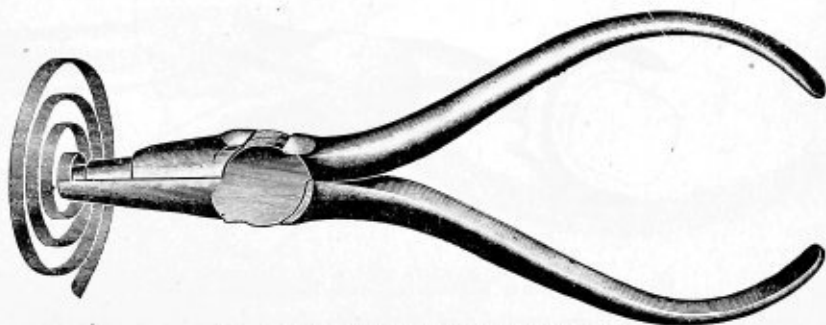
This is the best tool made for setting Half-Pearls, Turquoise, Etc.

No. "J," Nickel-plated	Each, \$1.25
------------------------	--------------



Pendant Bow and Ring Bending Plier.

No. "K," Polished Handles	Each, \$1.50
No. "L," Nickel-plated	Each, 1.75

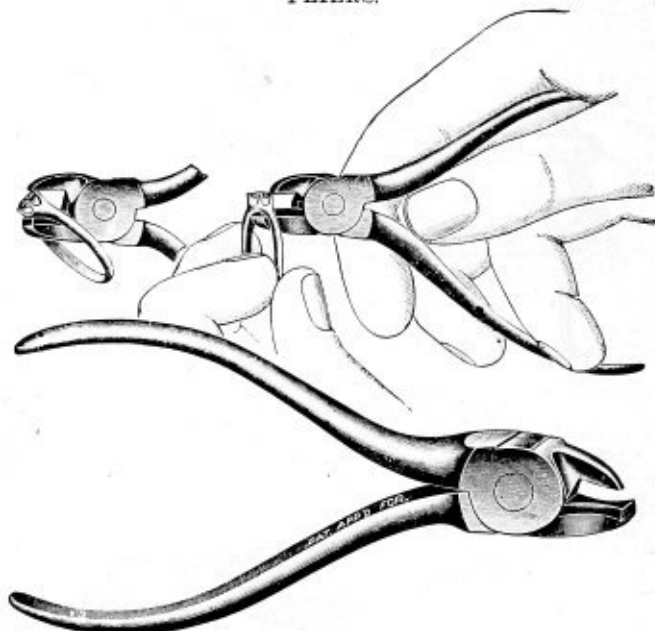


No. "M" Mainspring Shaping Plier.

Nickel-plated....each, \$0.60

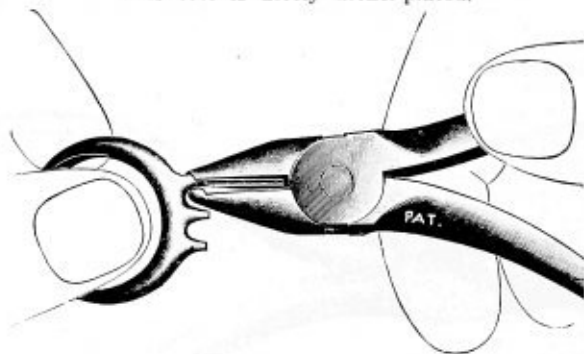
Always affix page number to item number, viz.: 1 only No. K-429.

PLIERS.



No. "E" Ring Setting Plier....each, \$1.25

This tool is nicely nickel-plated.



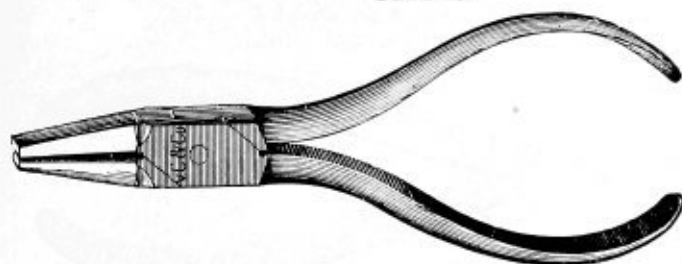
No. "G" Claw Stretching and Repairing Plier.

This is an exceedingly useful tool for stretching broken or worn claws.

No. "G" Nickel-plated....each, \$1.25

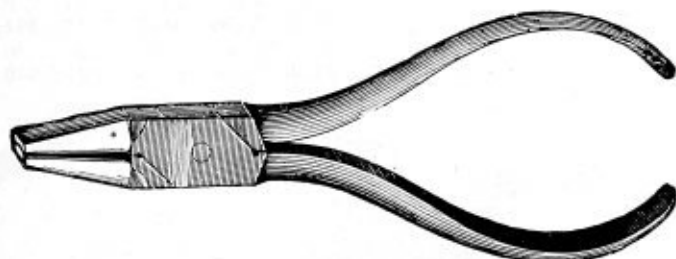
Order by respective number, viz.: 1 only No. G—430.

PLIERS.



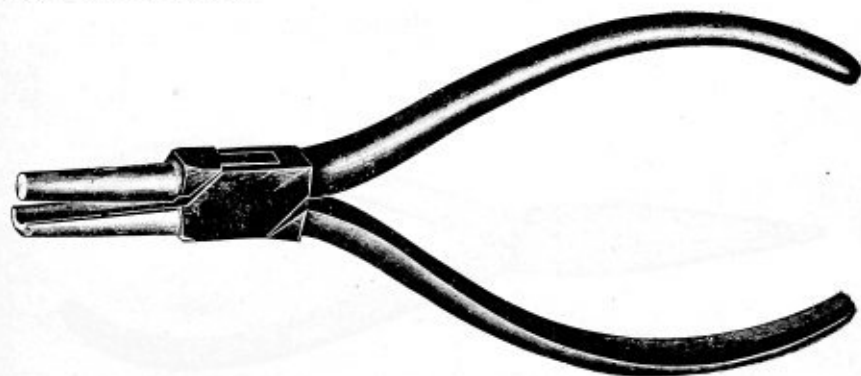
HALF
ROUND
NOSE
PLIER

Number	A	B	C	D
Lengths	4½"	5"	5½"	6"
Dozen	\$4.50	\$4.80	\$5.50	\$6.20



HOLLOW
NOSE
PLIER.

Number	E	G	H	J
Lengths	4½"	5"	5½"	6"
Dozen	\$6.00	\$6.50	\$7.25	\$8.30



HOLLOW NOSE BENDING PLIER.

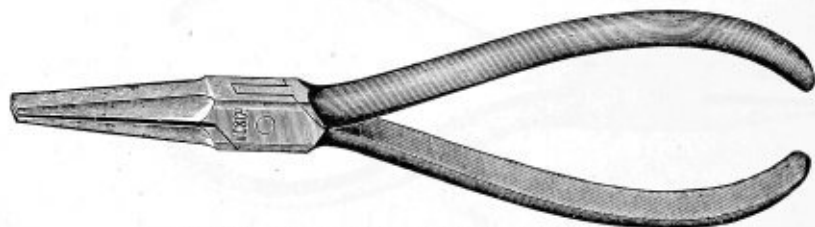
Number	K	L	M	N
Lengths	4½"	5"	5½"	6"
Dozen	\$8.25	\$8.50	\$9.75	\$11.00

Write orders thus, and avoid error: ½ Doz., No. G—431.

GENUINE FRENCH PLIERS.

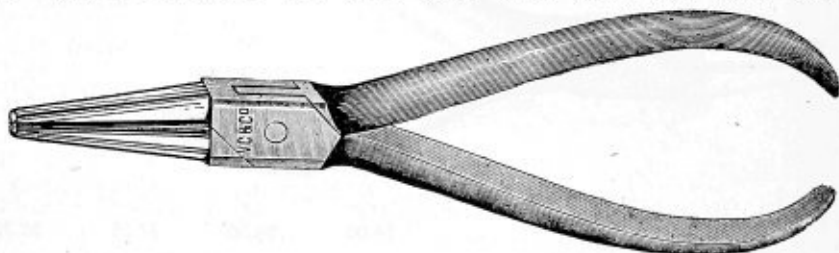
All Steel, Fully Warranted.

Illustrations are full size of 4" Pliers.



Long Flat Nose—Black Handles—Polished Jaws.

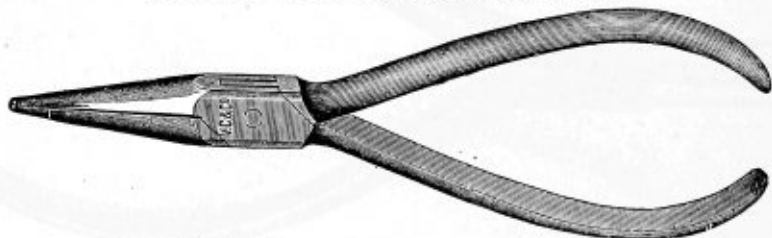
	Lengths:	3"	3½"	4"	4½"	5"	5½"	6"	7"	8"
Extra	Numbers:	A	B	C	D	E	G	H	J	K
Quality.	{ Dozen....	\$4.50	\$4.50	\$4.50	\$5.00	\$5.50	\$6.50	\$7.25	\$9.50	\$11.50
Good	Numbers:	1	2	3	4	5	6	7	8	9
Quality.	{ Dozen....	\$3.50	\$3.50	\$3.50	\$4.00	\$4.50	\$5.50	\$6.25	\$8.50	\$10.50



Long Round Nose—Black Handles—Polished Jaws.

	Lengths:	3"	3½"	4"	4½"	5"	5½"	6"	7"	8"
Extra	Numbers:	L	M	N	P	R	S	T	U	V
Good.	{ Numbers:	10	11	12	13	14	15	16	17	18

Prices same as Flat Nose of respective sizes.



Long Chain Nose—Black Handles—Polished Jaws.

	Lengths:	3"	3½"	4"	4½"	5"	5½"	6"
Extra	Numbers:	19	20	21	22	23	24	25
Quality.	{ Dozen.....	\$4.50	\$4.50	\$4.50	\$5.00	\$5.50	\$6.50	\$7.25
Good	Numbers:	26	27	28	29	30	31	32
Quality.	{ Dozen.....	\$3.50	\$3.50	\$3.50	\$4.00	\$4.50	\$5.50	\$6.25

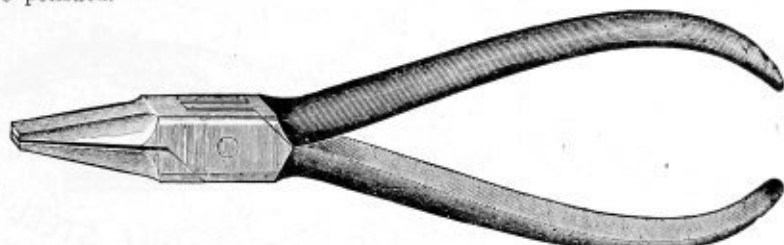
Always affix page number, viz.: ¼ Doz. No. 7—432.

GENUINE FRENCH PLIERS.

All Steel. Fully Warranted.

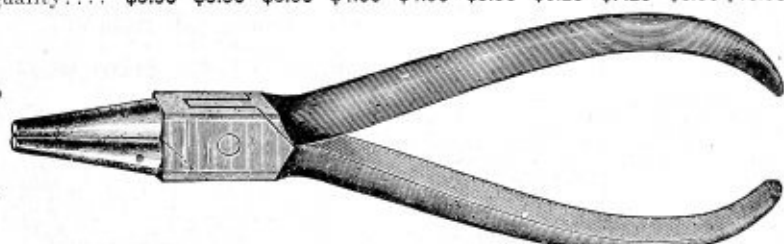
Illustrations are full size of 4" pliers. Body and Handles, black finish. Jaws are polished.

FLAT
NOSE
PLIER.



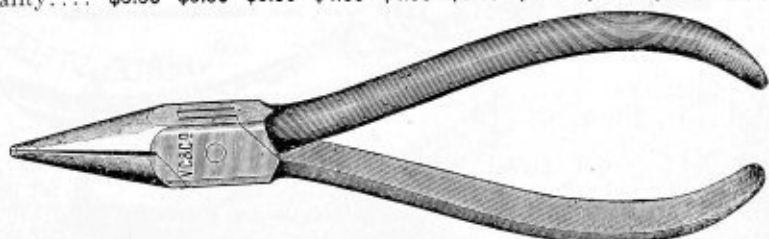
Number.....	A	B	C	D	E	G	H	J	K	L
Sizes	3"	3½"	4"	4½"	5"	5½"	6"	6½"	7"	8"
Extra Quality...	\$4.50	\$4.50	\$4.50	\$5.00	\$5.50	\$6.50	\$7.25	\$8.25	\$9.50	\$11.50
Number.....	M	N	P	R	S	T	U	V	W	X
Good Quality....	\$3.50	\$3.50	\$3.50	\$4.00	\$4.50	\$5.50	\$6.25	\$7.25	\$8.50	\$10.50

ROUND
NOSE
PLIER.



Number.....	1	2	3	4	5	6	7	8	9	10
Sizes	3"	3½"	4"	4½"	5"	5½"	6"	6½"	7"	8"
Extra Quality...	\$4.50	\$4.50	\$4.50	\$5.00	\$5.50	\$6.50	\$7.25	\$8.25	\$9.50	\$11.50
Number.....	12	13	14	15	16	17	18	19	20	21
Good Quality....	\$3.50	\$3.50	\$3.50	\$4.00	\$4.50	\$5.50	\$6.25	\$7.25	\$8.50	\$10.50

CHAIN
NOSE
PLIER.

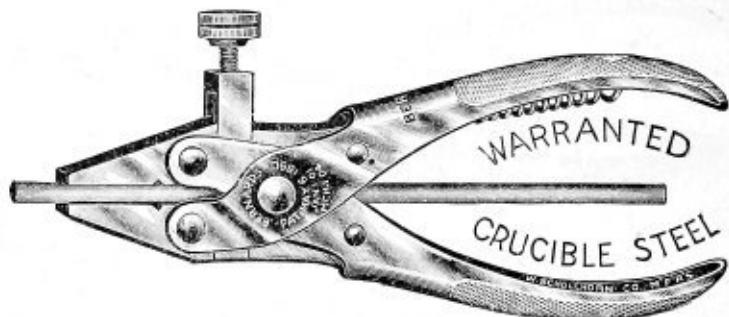


Number.....	31	32	33	34	35	36	37
Sizes	3"	3½"	4"	4½"	5"	5½"	6"
Extra Quality...	\$4.50	\$4.50	\$4.50	\$5.00	\$5.50	\$6.50	\$7.25
Number.....	43	44	45	46	47	48	49
Good Quality....	\$3.50	\$3.50	\$3.50	\$4.00	\$4.50	\$5.50	\$6.25

Write your orders this way—viz., ½ doz., No. 15—433.

"BERNARD" NEW MODEL VISE PLIERS.

Useful Tools for Machinists, Pattern and Model Makers, Jewelers, etc.

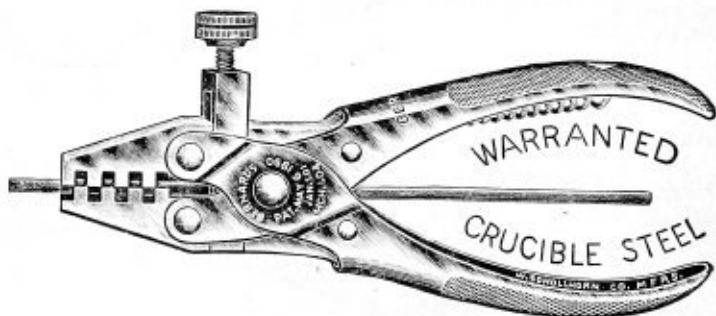


Open Throat, Parallel Jaws, Full Nickel Plated.

Can be used as a Plier, Wrench and Hand-Vise.

No. 113. 5" \$10.00 Dozen 6½" \$13.00 Dozen

"BERNARD" DRILL AND ROD PLIERS.



Open Throat, Parallel Jaws, Full Nickel Plated.

Especially made for holding Drills, Rods, etc.

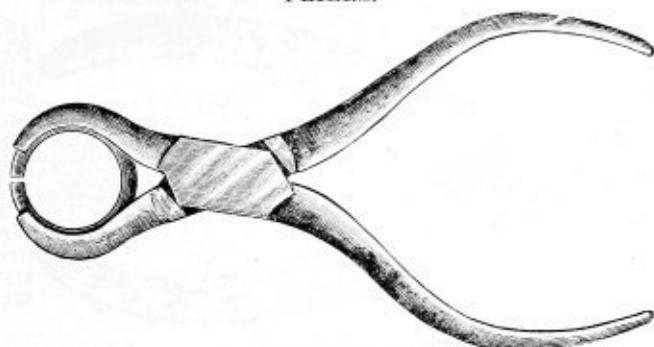
A useful Tool for Machinists, Jewelers, Electricians, etc.

No. 114. 5" \$11.00 Dozen 6½" \$14.00 Dozen

Order by respective number—viz., ½ Doz. 114—434.

This tells us what you want and the page on which to find it.

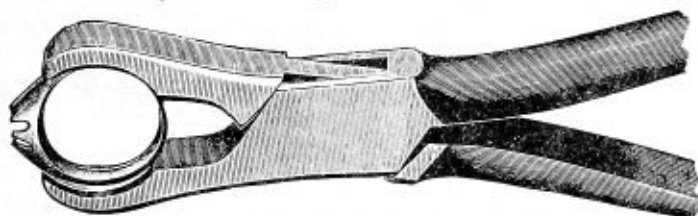
PLIERS.



RING PLIER.

For Forming or Holding Ring while Filing out Solder.

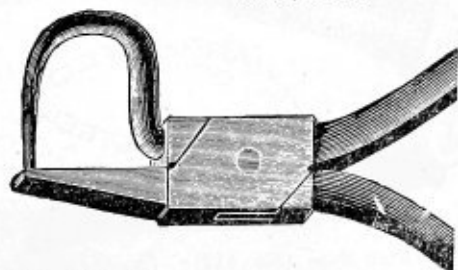
No. A.	Polished Handle, for Oval Rings.....	each, \$0.50
" B.	Nickel Plated, for Oval Rings.....	each, .70
" C.	Polished, for Flat Rings.....	each, .50
" D.	Nickel Plated, for Flat Rings.....	each, .70



RING PLIER.

For gripping ring firmly while finishing.

Price, \$0.90.



ENGLISH
HAWK
BILL
PLIER.

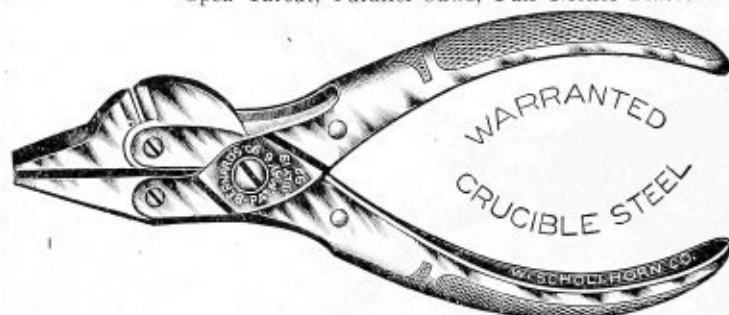
No. G.	4½" Black Finish.....	\$0.35 each
" H.	4½" Nickeled .....	.50 "

Always order by respective numbers, viz.: ½ Doz., No. G—435.

This system is simple, plain and avoids error.

BERNARD'S CUTTING PLIERS.

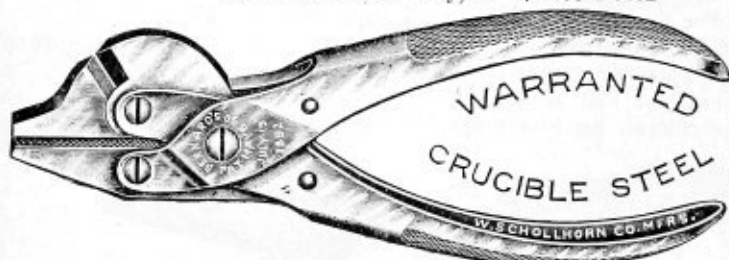
Open Throat, Parallel Jaws, Full Nickel Plated.



JEWELER'S
PATTERN
LIGHT
NOTE
THESE
WILL CUT
COMMON
SPRING
STEEL
WIRE,
BUT NOT
MUSIC
WIRE.

Flat Nose (No. 105).

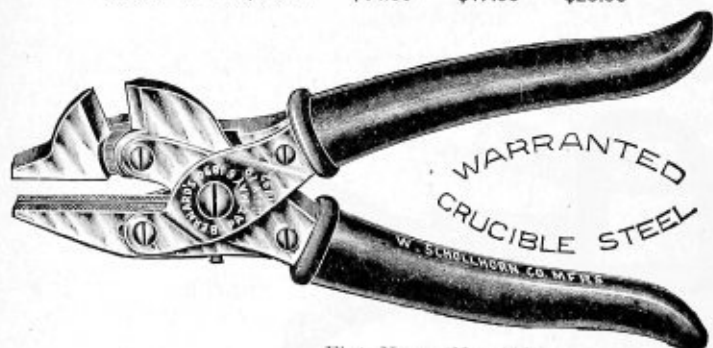
Made in one Size only, 5" \$12.00 Dozen



MACHIN-
IST'S PAT-
TERN EX-
HEAVY
CUTTING
QUALITY
SAME AS
NAMED
ABOVE.

Flat Nose Cutting.

Number	102	103	104	106
Lengths	4½"	5½"	6½"	7½" (extra heavy)
Dozen	\$11.50	\$14.50	\$17.50	\$23.50



ELECTRIC
PATTERN
FOR USE
ON SOFT
ELECTRIC
WIRE
ONLY.

Flat Nose (No. 112).

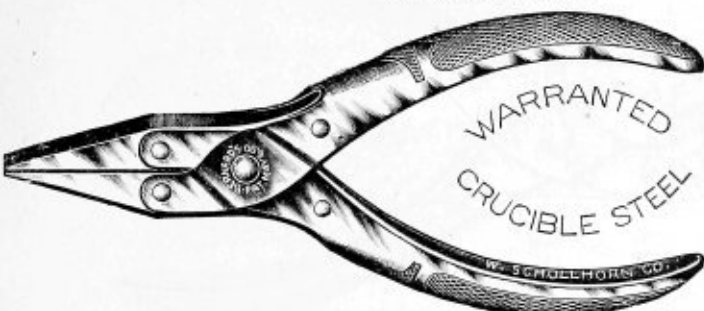
Made in one Size only 8" \$28.00 Dozen

Handles Protected with Rubber Covers.

Write your orders this way—viz.,

1 only No. 103—436.

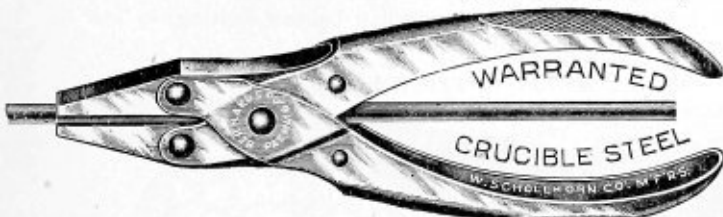
BERNARD'S PLIERS.
Open Throat—Parallel Jaws.
Full Nickel Plated.



Flat Nose (No. 103)

Jewelers' Pattern.
Light.

No.	Lgth.	Doz.
A	3½"	\$5.00
B	4"	5.50
C	4½"	6.00
D	5"	7.00
E	6"	8.00

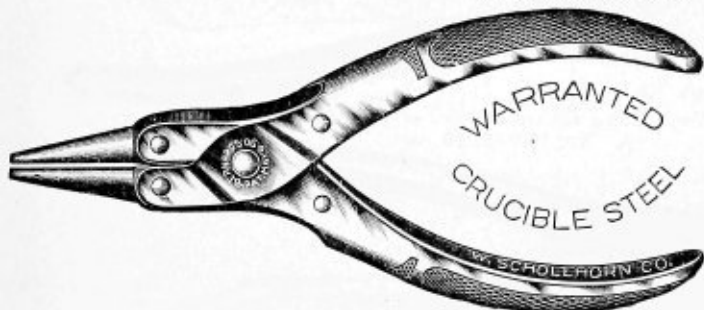


Flat Nose (No. 100)

Machinists' Pattern.

Extra Heavy.

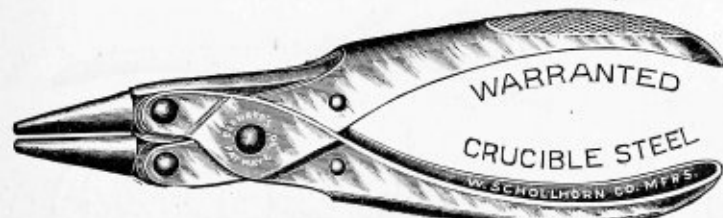
No.	Lgth.	Doz.
G	4½"	\$6.00
H	5½"	8.00
J	6½"	10.00
K	7½"	14.00



Round Nose (No. 104)

Jewelers' Pattern.
Light.

No.	Lgth.	Doz.
L	4"	\$5.50
M	4½"	6.00
N	5"	7.00



Round Nose (No. 101)

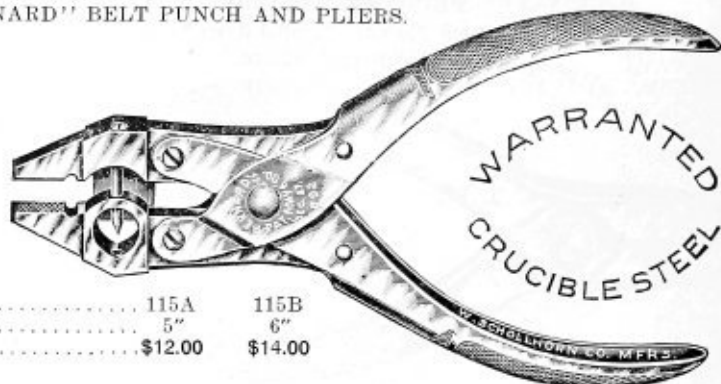
Machinists' Pattern.

Extra Heavy.

No.	Lgth.	Doz.
T	4½"	\$6.00
U	5½"	8.00
V	6½"	10.00
W	7½"	14.00

Order this way: ¼ doz. No. C—437.

"BERNARD" BELT PUNCH AND PLIERS.

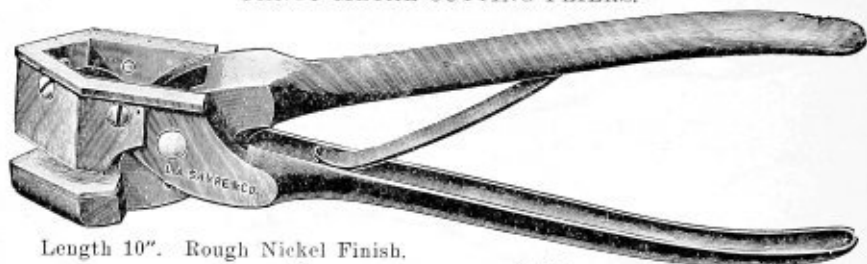


Number	115A	115B
Length	5"	6"
Dozen	\$12.00	\$14.00

PARALLEL JAWS, FULL NICKEL PLATED.

A Combination Tool for Cutting and Piercing Round Leather Belting, $\frac{1}{4}$ and $\frac{3}{8}$ Inches Diameter.

FANCY METAL CUTTING PLIERS.



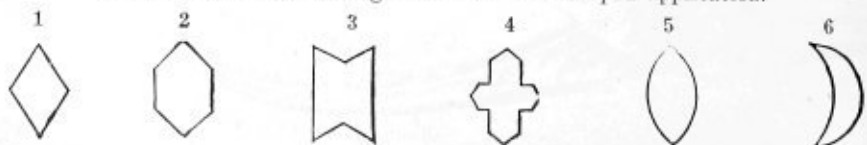
Length 10". Rough Nickel Finish.

For cutting square corners of thin metals.

No. 100—\$1.80 each.

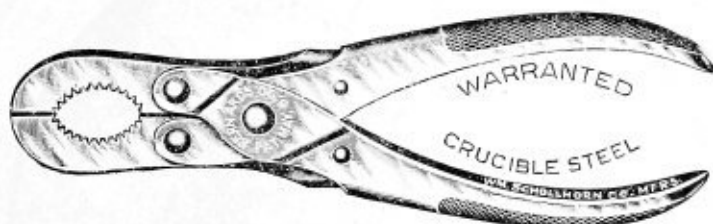


Adjustable and Interchangeable Plier. Price upon application.



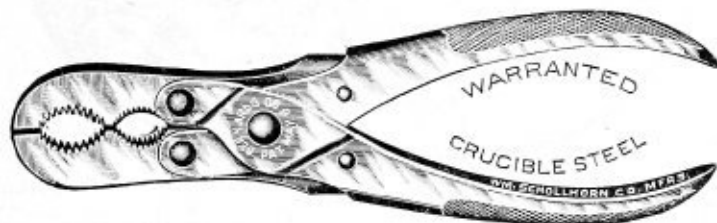
"BERNARD" GAS PLIERS.

Open Throat, Parallel Jaws, Full Nickel Plated.

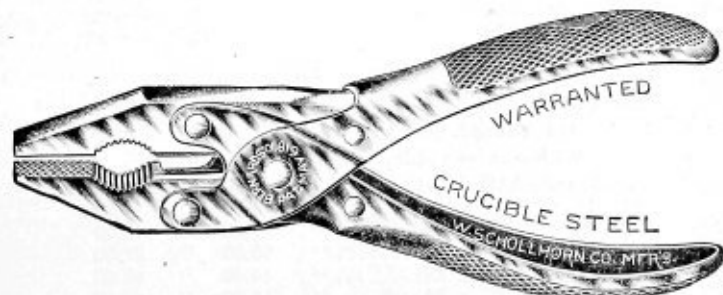


No. 108. 5" \$7.00 Dozen

6" \$9.00 Dozen



No. 109. Length 7" \$12.00 Dozen



A Flat-Nose Gas Plier and Cutter Combined.

No. 110. Length 5½" \$10.00 Dozen

OIL TANNED CHAMOIS

In Kips (30 Skins)

These Skins are first quality and are cut and trimmed to a uniform size.



No. 00—6 x 8.....kip	\$1.15
“ 0—6½ x 8½.... “	1.35
“ 1—7 x 9..... “	1.65
“ 2—8 x 10..... “	2.25
“ 3—9 x 11..... “	2.65
“ 4—10 x 13..... “	3.50
“ 5—11 x 13½.... “	4.00
“ 6—12 x 14..... “	4.60
“ 7—12 x 16..... “	6.00
“ 8—13 x 16..... “	6.75
“ 9—13 x 17..... “	7.50

No. 10—14 x 18.....kip	\$9.00
“ 11—15 x 20..... “	10.15
“ 12—16 x 21..... “	11.25
“ 13—17 x 23..... “	13.15
“ 13a—18 x 24..... “	14.40
“ 14—19 x 25..... “	15.50
“ 15—20 x 26..... “	18.75
“ 16—23 x 26..... “	22.50
“ 17—26 x 28..... “	27.00
“ 18—28 x 32..... “	33.75

DOLE CHAMOIS.

For Silver, Jewelry, Fancy Work and Toilet Uses.

Oil Tanned. Can be used wet or dry.

White on one side, Yellow on the other.

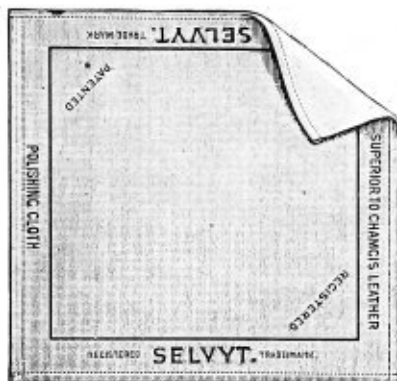
No. 1 Dole—12 x 15½.....doz.	\$ 3.60	kip	\$ 9.00
“ 1½ “ —14 x 18..... “	5.40	“	13.50
“ 2 “ —16 x 20..... “	7.20	“	18.00
“ 3 “ —20 x 24..... “	10.80	“	27.00
“ 4 “ —23 x 28..... “	14.40	“	36.00
“ 5 “ —25 x 34..... “	18.00	“	45.00
“ 6 “ —28 x 36..... “	21.60	“	54.00

Note.—Snow White Chamois are furnished in the same sizes and at the same prices of “DOLE.” Be sure to specify Snow White if they are wanted.

THE

REGISTERED "SELVYT" TRADE MARK.

POLISHING CLOTH AND DUSTER.



The "Selvyt" Polishing Cloths and Dusters, for polishing Silver, Musical Instruments, Metal or Wood, Plate, Glass, Furniture, etc., etc., never become greasy, and are as good as new when washed. Silver Plate, Bright Metal Ware, Cutlery, and all Bright Instruments wrapped in the Selvyt Cloth never tarnish. The Selvyt Dusters leave no lint and readily absorb all oil or grease.

Hemmed ready for use in the following sizes:

Inches	5¼x5¼	10¼x10¼	14x14	17½x14	21x17½	21x20	21x25	28x28
	O	A	B	C	D	E	E1	F
Per doz.	\$0.70	\$1.80	\$3.00	\$3.75	\$5.00	\$5.75	\$7.85	\$10.00
BUCK SKINS are about ⅛ of an inch in thickness.								
ELK	"	"	"	¼	"	"	"	"

Both of these skins are used largely by Watch Case Manufacturers. Prices vary according to size, fineness of grain, quality, and condition of the skins—from \$2.00 to \$3.00 per pound.

SELECTED SHEEP SKINS average about 8 to 9 square feet to a skin. Price is governed by the size, thickness and quality—from \$6.00 to \$12.00 per dozen skins.

POLISHING COMPOSITIONS.

TRIPOLI—SPECIALLY ADAPTED FOR CUTTING DOWN AND POLISHING.

Brass, Britannia Metal, Bronze, etc., preparatory to plating.

1A Grade, \$0.10 per pound (1 lb. cakes). Used for polishing.

XXX “ .08 “ “ (1 lb. cakes). “ “ cutting down.

Special “ .08 “ “ (2 lb. cakes). “ “ “ “

CROCUS (or red) Composition produces a smooth finished surface on cast iron, also steel. It is fast cutting material.

Price, \$0.06 per pound. Cakes about 3 lbs. each.

NOTE—Crocus is used by silversmiths for cutting down.

EMERY PASTE OR COMPOSITION—IN PAPER CYLINDERS.

Flour Grades—“FFF,” “FF,” “F,” Grain Numbers, 90, 120, 150, 180.

Price per lb., \$0.08, flour or grain, all numbers.

BLACK TRIPOLI COMPOSITION—FOR CUTTING DOWN BRASS AND SIMILAR METALS.

Price, \$0.10 per pound. Cakes about 2 lbs. each.

PLATINUM COMPOSITION—BEST MADE FOR CUTTING DOWN PLATINUM

Price per pound, \$0.20. Cakes, 1 lb. each.

ACME WHITE (VIENNA LIME COMPOSITION).

Produces a high color and finish on nickel-plated work. Put up into sealed cans weighing 2 lbs. each.

Price per pound, \$0.15.

WHITE DIAMOND POLISH—“No. XXXX.”

A splendid material for aluminum work.

Price per pound, \$0.15. Cakes 1 lb. each.

WHITE DIAMOND POLISH—“No. XX.”

For Jewelers', Nickel Platers' and Brass Polishers' Use.

Price per pound, \$0.12. Cakes 2 lbs. each.

Special Prices for Quantity Orders.

BOXED POLISHING MATERIALS.
POWDERED—PUT UP IN WOOD BOXES.
PRICES ARE PER DOZEN BOXES.



No. 1.
\$1.00.



No. 2.
\$2.00.



No. 3.
\$1.20.

Boxes Nos. 1 to 3 contain 1 ounce of material each.



No. 4.
\$1.20.



No. 5.
\$1.80.



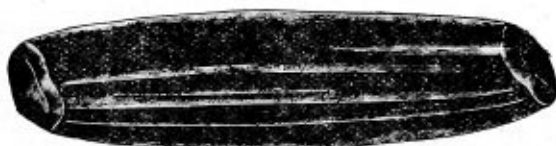
No. 6.
\$1.20.



No. 7.
\$1.00.

Boxes Nos. 4 to 7 contain 2 ounces of material each.

STICK ROUGE AND TRIPOLI.



Put up in neat cardboard cartons like illustration below.



- | | | |
|--------|--|--------------|
| No. 8. | Lafayette Hard Gold Rouge, $\frac{1}{8}$ lb. sticks..... | \$1.00 Dozen |
| “ 9. | Lafayette Tripoli, best quality, $\frac{1}{4}$ lb. sticks..... | 1.00 “ |

POLISHING AND FINISHING MATERIALS.
IN "POWDER" FORM.

Put up in Bottles, Tin Cans, etc.



Is a superior article for polishing Steel, Gold, Silver and Precious Stones, where a high degree of finish is necessary, and especially adapted for watch and fine instrument makers. It is also an excellent article for polishing Pearl, Ivory, Horn, Shell and Porcelain.

NOTE—The large bottles contain about three times more than the small bottles.

	Doz.	Each
No. A. Small bottles	\$4.00	\$0.40
No. B. Large bottles	8.00	.80

IMPORTED VIENNA LIME.
IN LAMP FORM.

Put up in sealed bottles.

No. C.	\$1.50 dozen	\$0.15 each
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DIAMONTINE POWDER.

No. D. For cutting steel.....	\$3.00 dozen	\$0.30 each
No. E. " polishing steel	3.00 dozen	.30 each

This material is imported. Put up in sealed bottles.

POLISHING MATERIALS.
IN BULK FORM.

CYANIDE POTASSIUM.
(Chemically Pure.)

No.		Per lb.
G. In	1-lb. cans.....	\$0.45
H. In	5-lb. cans.....	.40
J. In	10-lb. cans.....	.38
K. In	25-lb. cans.....	.34
L. In	50-lb. cans.....	.32
M. In	112-lb. cans.....	.30

DIAMANTINE POWDER.

No. N.	per lb. (Troy)	\$15.00
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PREPARED CHALK.

No. P.	per lb.	\$0.08
-------------	---------	--------

STEEL GLOSSING POWDER.

No. R.	per lb.	\$1.25
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VIENNA LIME.
Powdered.

No.		Per lb.
S. 10-lb. cans.....		\$0.09
T. 50-lb. cans.....		.08
U. Single pound.....		.15
	Lump.	
V. 10-lb. cans.....		.08
W. 50-lb. cans.....		.07

WHITING—POWDERED.

No. X.	per lb.	\$0.05
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Order by respective number always and be sure to affix the page number, viz.:
1 only, J—444.

IMPORTED POLISHING STONES.

For Jewelers, Silversmiths and Die Makers.

BLACK STONE SLIPS.

No. 1	Soft,	9 "	long,	$\frac{1}{2} \times \frac{3}{8}$ "	per package of 12	\$0.80
" 2	Soft,	9 "	"	$\frac{1}{2} \times \frac{1}{8}$ "	" " " 25	.80
" 3	Soft,	$8\frac{1}{2}$ "	"	$\frac{1}{4} \times \frac{1}{8}$ "	" " " 50	.80
" 4	Rough,	9 "	"	$\frac{1}{2} \times \frac{3}{8}$ "	" " " 12	.80
" 5	Rough,	9 "	"	$\frac{1}{2} \times \frac{1}{4}$ "	" " " 25	.80
" 6	Rough,	$8\frac{1}{2}$ "	"	$\frac{1}{4} \times \frac{1}{8}$ "	" " " 50	.80

BLUE STONES 8" LONG.

No.	Square	Qty. in Pkge.	Price per Pkge.
7	1"	4	\$0.50
8	$\frac{3}{8}$ "	6	.50
9	$\frac{3}{4}$ "	8	.50
10	$\frac{3}{8}$ "	10	.50
11	$9/16$ "	12	.50
12	$\frac{1}{2}$ "	16	.50
13	$\frac{3}{8}$ "	20	.60
14	$5/16$ "	25	.60

GREEN STONES 8" LONG.

No.	Square	Qty. in Pkge.	Price per Pkge.
15	$\frac{5}{8}$ "	12	\$0.60
16	$7/16$ "	12	.80
17	$\frac{3}{8}$ "	25	.80

GRAY STONES.—(Square Pencils.)

No.	Square	Qty. in Pkge.	Price per Pkge.
18	1"	4	\$0.80
19	$\frac{3}{4}$ "	6	.80
20	$11/16$ "	8	.80
21	$\frac{5}{8}$ "	10	.80
22	$9/16$ "	12	.80
23	$\frac{1}{2}$ "	16	.80
24	$7/16$ "	20	.90
25	$\frac{3}{8}$ "	25	1.00

RED STONES.—(Square Pencils.)

No.	Square	Qty. in Pkge.	Price per Pkge.
26	1"	4	\$0.80
27	$\frac{3}{4}$ "	6	.80
28	$11/16$ "	8	.80
29	$\frac{5}{8}$ "	10	.80
30	$9/16$ "	12	.80
31	$\frac{1}{2}$ "	16	.80
32	$7/16$ "	20	.90
33	$\frac{3}{8}$ "	25	1.00

IMPORTED STONE SLIPS.

Used Principally by Watch Case Makers.

BLUE, 8" LONG.

No.	Flat	Qty. in Pkge.	Price per Pkge.
34	$\frac{5}{8} \times 1/16$ "	25	\$0.75
35	$7/16 \times 3/16$ "	50	.75
36	$\frac{3}{8} \times \frac{1}{8}$ "	25	.80
37	$\frac{1}{4} \times \frac{1}{8}$ "	50	.80

RED, 8" LONG.

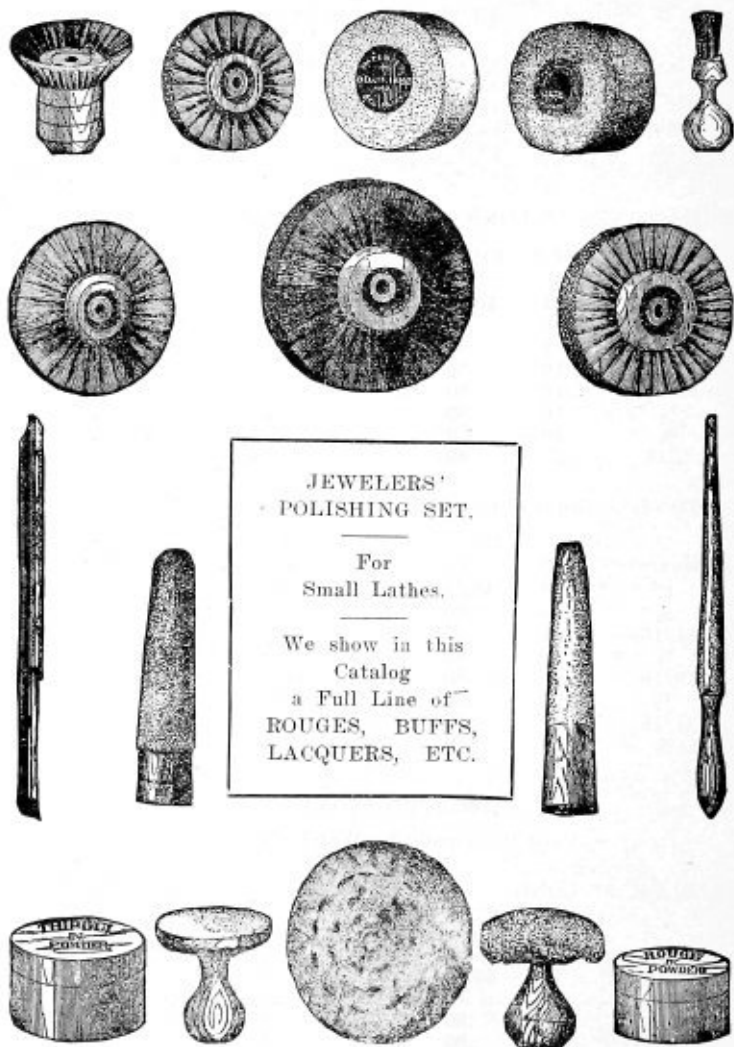
No.	Flat	Qty. in Pkge.	Price per Pkge.
38	$\frac{3}{8} \times 3/16$ "	50	\$1.25
39	$\frac{1}{2} \times \frac{3}{8}$ "	12	.80
40	$\frac{1}{2} \times \frac{1}{4}$ "	25	.80
41	$\frac{1}{4} \times \frac{1}{8}$ "	50	.80

GRAY STONE SLIPS.

No. 42.	6" long, $\frac{3}{8} \times 3/16$ ", per package of 50 pieces.	\$1.25
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GREEN STONE SLIPS.

No. 43.	8" long, $\frac{1}{4} \times \frac{1}{8}$ ", per package of 50 pieces.	\$1.00
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For List and Prices See Opposite Page.

JEWELER'S POLISHING SETS.

See Illustrations on the Opposite Page.

This Set will meet the requirements of every plater and polisher for small work. It contains all the necessary Brushes, Buffs, etc., as per list below

- 1 Bristle Circular Brush, $1\frac{1}{4}$ inch block, 4 rows.
- 1 Bristle Circular Brush, $1\frac{1}{4}$ inch block, 3 rows.
- 1 Bristle Circular Brush, $1\frac{1}{4}$ inch block, 2 rows.
- 1 Bristle Circular Brush, 1 inch Block, 3 rows.
- 1 Bristle End Brush, $\frac{3}{8}$ inch Block.
- 1 Bristle Watch-case Brush, $1\frac{1}{4}$ in. face, 2 rows.
- 1 Walrus Flat Buff.
- 1 Felt Wheel, $1\frac{1}{2}$ inch.
- 1 Walrus Wheel, $1\frac{1}{2}$ inch.
- 1 Cotton Buff, $3\frac{1}{4}$ inch, 2 rows.
- 1 Muslin Buff, $2\frac{1}{2}$ inch.
- 1 Box Tripoli.
- 1 Box Rouge.
- 1 Felt Watch-case Buff.
- 1 Buckskin Watch-case Buff.
- 1 Cotton Watch-case Buff.
- 1 Felt Ring Buff, 3 inch, joined.
- 1 Walrus Ring Buff, 3 in. joined.
- 1 Cotton Ring Buff, 3 in. joined.
- 1 Felt Hand Flat Buff.

COMPLETE SET

\$3.60

We make a specialty of
Special Sets for the job-
bing trade.

GET OUR PRICES BEFORE PLACING YOUR ORDERS ELSEWHERE.

SPECIAL

We carry the largest and most complete stock of supplies (used by the Jeweler, Silversmith, Arts & Crafts Workers and manufacturers of metal goods in general) to be found in America.

**OUR SERVICE, QUALITY AND PRICES ARE
UNQUESTIONABLY THE BEST**

IMPROVED MERCURY PLUMB BOBS.

No. 87.

The improvement consists in our patented device for fastening the string without a knot to tie or untie, simply by drawing it into the peculiarly slotted neck at the top, after unwinding the required length, when the bob will hang perfectly true.

These plumb bobs are made from solid steel bored and filled with mercury. Noteworthy features are their great weight in proportion to size, low center of gravity, small diameter, hardened and ground points, knurling on the body and the simple and effective device at top for fastening end of line after winding up. Nickel plated. Each is provided with a braided silk line.

Prices

4	in. long,	$\frac{1}{2}$ in. diam,	$3\frac{1}{2}$ oz.	\$1.00
5	" "	$\frac{5}{8}$ " "	6 " "	1.50
$5\frac{1}{2}$	" "	$\frac{7}{8}$ " "	12 " "	2.00
6	" "	1 " "	16 " "	2.50

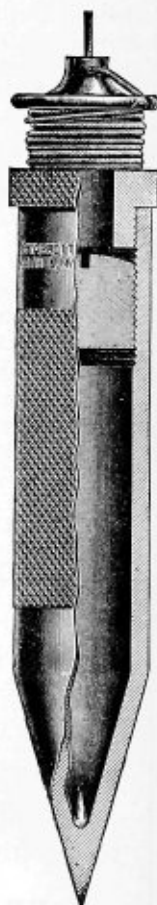
STEEL PLUMB BOBS.

No. 177.

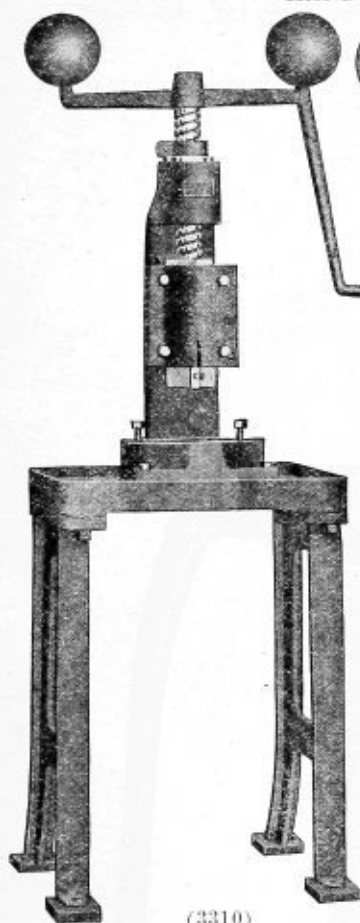
The same in design as No. 87, but made from solid steel, the mercury being omitted.

Prices

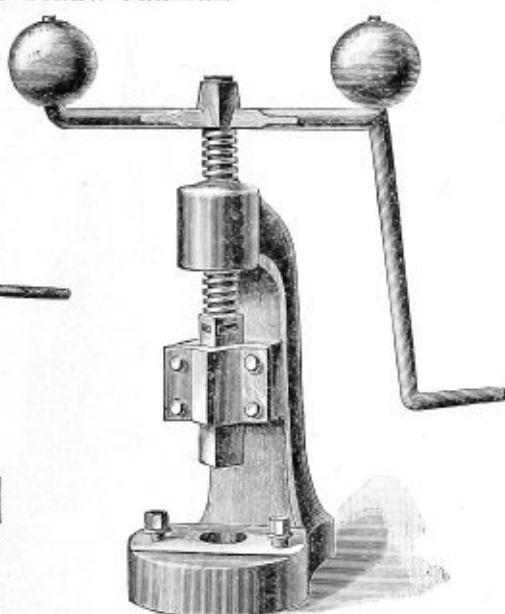
4	in. long,	$\frac{1}{2}$ in. diam.	$2\frac{3}{4}$ oz.	\$0.75
5	" "	$\frac{5}{8}$ " "	5 " "	1.00
$5\frac{1}{2}$	" "	$\frac{7}{8}$ " "	$8\frac{1}{2}$ " "	1.50
6	" "	1 " "	$14\frac{1}{2}$ " "	2.00



HAND SCREW PRESSES.



(3310)



(2739)

- A Height from bed to ways.....inches
 B Diameter of hole in bed....."
 C Depth of throat from center of slide "
 D Width of bed....."
 E Distance between die-bed bolts...."
 F Diameter of screw....."
 G Double thread with lead of....."
 H *Square slide"
 J Finished weightpounds

*Bottom of slide is left blank unless ordered special.

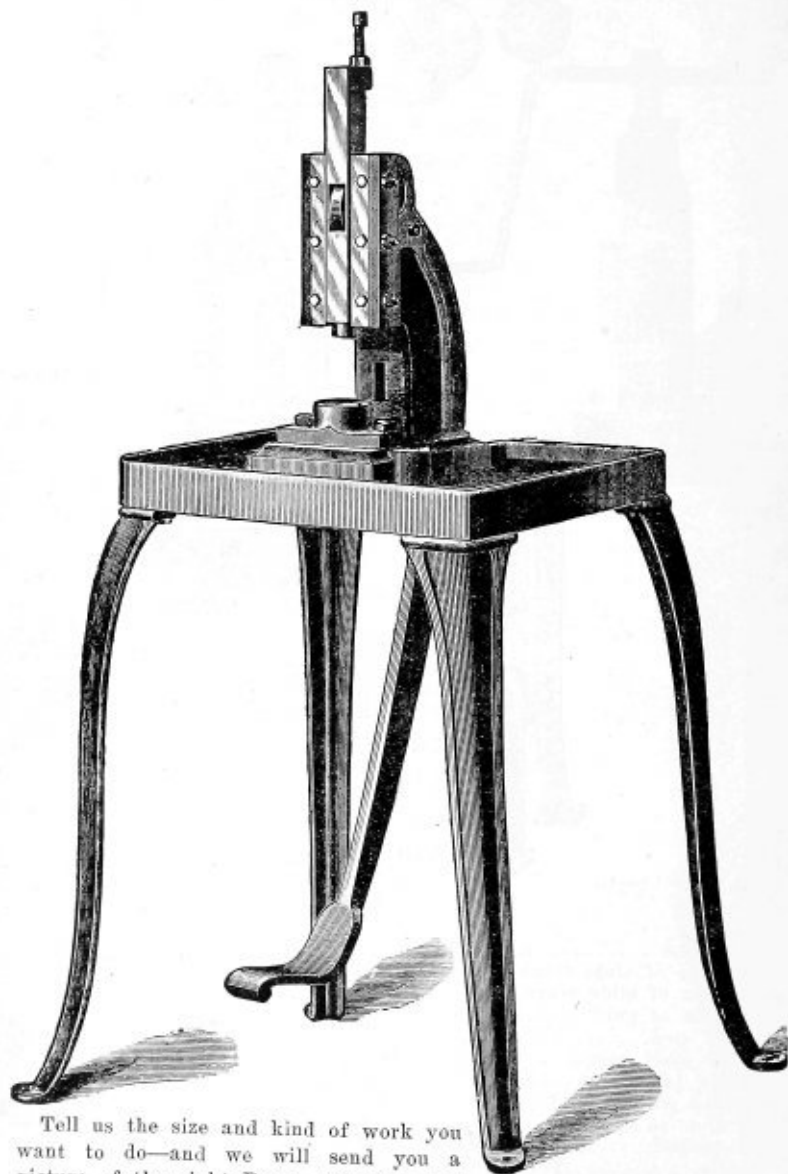
	inches.
Maximum stroke	5
Bed to bottom of slide when up.....	6½
Bed to bottom of slide when down....	1½
Bed to bottom of guide.....	6¼
Diameter of bed.....	12
Diameter of steel screw.....	2¼
Size of slide (square).....	3x3
Double thread with lead of.....	1½
Center of slide to upright.....	3
Oval hole in bed.....	3x5
Size of table.....	20x24
Floor space	40x40
Weight of machine on table.....	766 lbs.
Price	\$.....

	No. 1 2739	No. 2 3343	No. 3 2540	No. 4 3344	No. 5 3345
A	7½	7	9¼	9¼	11¼
B	2¼	3½	3	4	2½
C	3¼	5	6¼	8	4
D	11½	14	12¼	16	14
E	9	10	9	10	10
F	2	2¼	2¼	2½	2½
G	1	1	1	1½	1½
H	2	2½	2½	3	3
J	420	600	700	800	1000

T slot for die-bed bolts runs from side to side of bed.

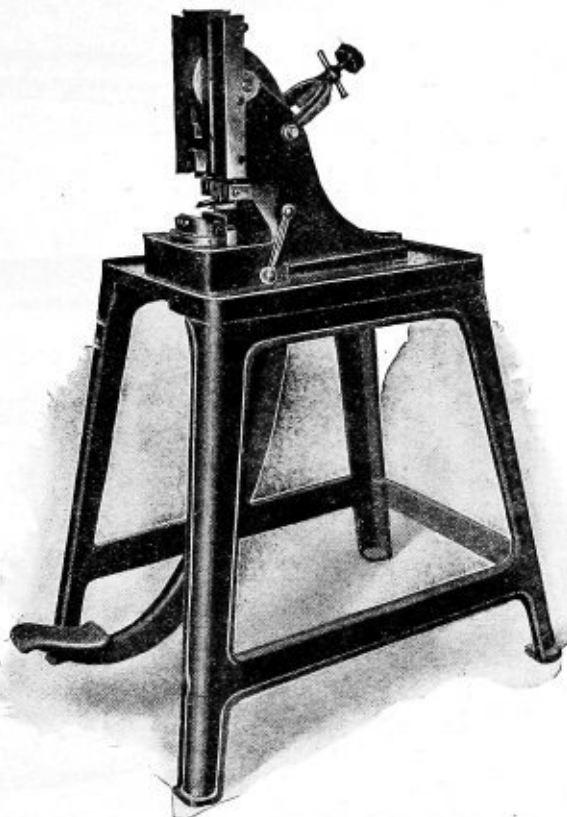
Prices upon application only.

FOOT PRESSES.



Tell us the size and kind of work you want to do—and we will send you a picture of the right Press—and give you our best price.

CHAPMAN'S AMERICAN FOOT PRESS.



This foot press is built without regard for cost of either material or labor, the intention being to produce a press that will, by its accurate and durable working parts, prove to be the most economical in use, especially so to anyone using fine and expensive press tools. It will cut heavy blanks, or do the finest piercing, without any special adjusting, and is always ready for work.

The Bed Plate is secured in position, or instantly released by the simple movement of a lever (shown in the cut) at the side of the press head, in a convenient position for the operator, and thoroughly reliable.

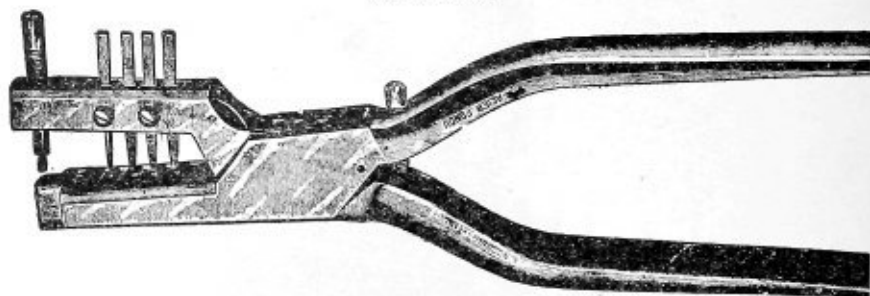
The plunger has $1\frac{1}{8}$ inch movement, has 1 inch plain hole, with set screw for holding the large punches, and a reducing socket is supplied to hold the smaller tools.

One Round Bed Plate fitted complete, or left ready for planing out to suit cutters, is also supplied with the press.

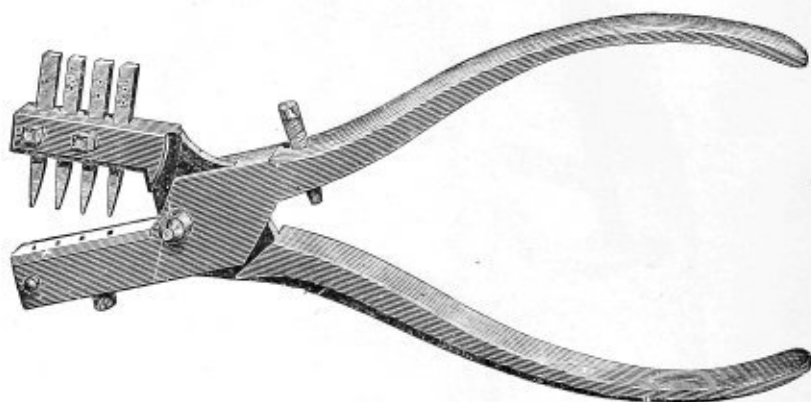
Price, with Bed Plate and Reducing Socket....Net \$150.00

Weight about 575 lbs.

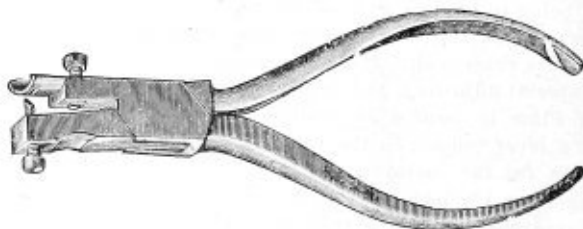
PUNCHES.



No. "A" Main Spring and Barrel Hook Punch, nickel plated....each, \$1.15



No. "B" Main Spring Punch.....each, \$1.00



No. "C" Main Spring and Barrel Hook Punch.....each, \$0.75

Note—Always affix page number to the item number, viz.:

1 only No. B—452.

CENTER PUNCHES.



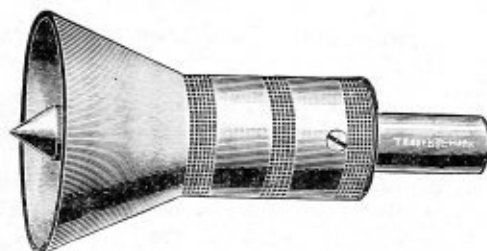
Length of each size, 4 inches. Diameter, A $\frac{5}{64}$ inch, B $\frac{3}{32}$ inch, C $\frac{9}{64}$ inch, D $\frac{5}{32}$ inch.

A larger size, E, is made for heavy work; length 5 inches, diameter $\frac{1}{4}$ inch, diameter of knurled part $\frac{1}{2}$ inch.



All Sizes, \$2.00 Dozen

BELL CENTERING PUNCH.



This punch will center all sizes up to $1\frac{3}{8}$ inch diameter.

Each....\$0.75



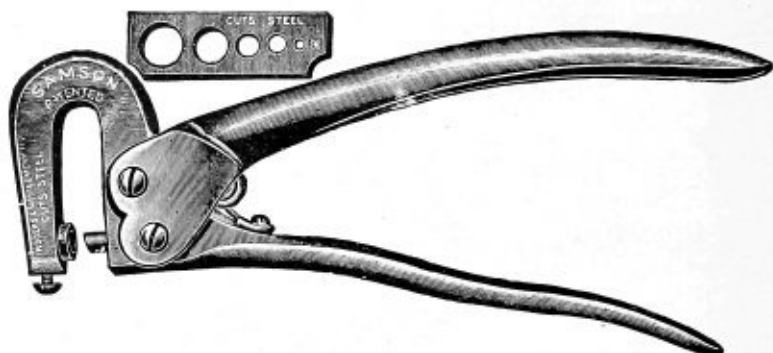
Automatic

Size A—Automatic....\$2.00. Is 5 inches long when adjusted for a medium stroke, $\frac{1}{2}$ inch in diameter and weighs 3 ounces.

Size B—Automatic....\$2.50. Is 6 inches long when adjusted for a medium stroke, $\frac{5}{8}$ inch in diameter and weighs 4 ounces. It differs from the A size in being larger and capable of striking a much heavier blow.

When adjusted for either light or heavy stroke, all indentations are of a uniform size for the starting of the drill, etc., and accurate and quicker work can be done. The working parts are hardened, durable and accessible for such repairs as may ever be needed.

SAMSON HAND PUNCHES.



No. 1. With one $\frac{3}{16}$ " Punch and Die....Dozen, \$19.00
Depth of throat, $1\frac{1}{8}$ ".

Will penetrate (without burr) through $\frac{1}{16}$ inch thick brass—steel, galvanized iron and metal of every description to 18 gauge in thickness, sizes as shown in illustration. Also slate without cracking, including softer materials in sizes to $\frac{1}{4}$ " thickness.

No. 4. Similar in design, will punch holes $2\frac{9}{16}$ " from the edge....Dozen, \$30.00

EXTRA PUNCHES AND DIES.

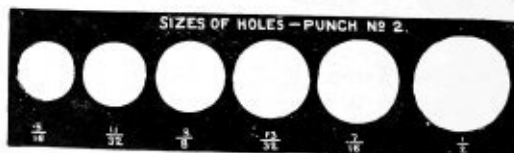
For Nos. 1 and 4 sizes.

Mounted in a neat wood box.

Set of six punches and dies to punch holes, sizes illustrated above.

Set of six....per set, \$2.80.

Style of Head of No. 2 Size.
Handles same as in above punch.



Depth of throat, $1\frac{1}{8}$ in. Will punch sizes shown here. Made for cutting thin soft metals only.

No. 2, with one $\frac{9}{32}$ in. punch and die

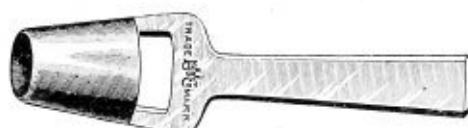
Set of six punches and dies

per dozen, \$30.00
per set, 4.00

HAND PUNCHES.

ROUND HOLE
PUNCHES.

Numbers ... D	E	G	H	J	K	L	M
Size 3/32"	7/64"	1/8"	9/64"	5/32"	11/64"	3/16"	13/64"
Dozen \$3.25	\$3.25	\$3.25	\$3.25	\$3.25	\$3.25	\$3.25	\$4.25
Size 7/32"	15/64"	1/4"	17/64"	9/32"	5/16"	11/32"	3/8"
Numbers... N	P	R	S	T	U	V	W
Dozen \$4.25	\$4.25	\$5.25	\$5.25	\$5.25	\$6.25	\$8.25	\$8.25

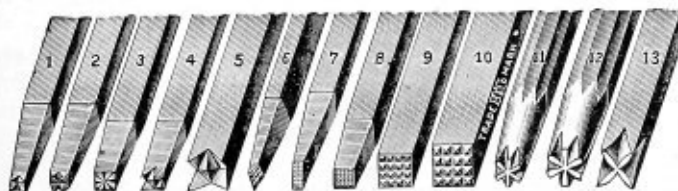
ROUND PUNCHES
WITH DOUBLE
ARCH HANDLES.

Numbers .. 17	18	19	20	21	22	23	24	25
Size 3/8"	7/16"	1/2"	9/16"	5/8"	11/16"	3/4"	13/16"	7/8"
Each \$0.80	\$0.80	\$0.85	\$0.88	\$0.92	\$0.95	\$1.05	\$1.05	\$1.09
Numbers .. 26	27	28	29	30	31	32	33	34
Size 15/16"	1"	1 1/16"	1 1/8"	1 3/16"	1 1/4"	1 5/16"	1 3/8"	1 7/16"
Each \$1.15	\$1.20	\$1.80	\$2.08	\$2.08	\$2.08	\$2.50	\$2.67	\$2.67
Numbers .. 35	36	37	38	39	40	41	42	43
Size 1 1/2"	1 5/8"	1 3/4"	1 7/8"	2"	2 1/8"	2 1/4"	2 3/8"	2 1/2"
Each \$2.67	\$2.75	\$3.50	\$3.75	\$4.00	\$4.25	\$4.75	\$5.25	\$6.00

PIN
PUNCHES.

Numbers A	B	C
Diameters 3/32"	1/8"	5/32"
Dozen \$1.50	\$1.50	\$1.50

WOOD CARVERS' MARKING PUNCHES.



All Numbers.....each, \$0.30

Nos. 14, 15 and 16 are the same as Nos. 8, 9 and 10, excepting they are round instead of square.

Write your orders, viz.:

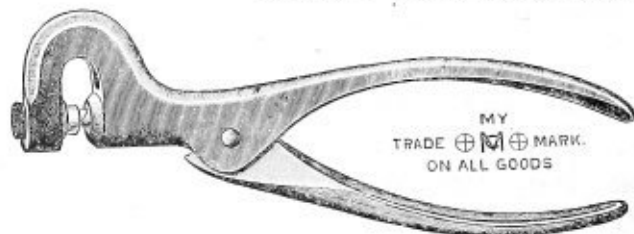
1/2 Doz. No. J-455.

METAL CUTTING HAND PUNCHES.

This illustration represents an Imported Metal Cutting Hand Punch.

Number	2	4	6	8	10	12
Approximate Diam. of Punch	.041"	.043"	.046"	.052"	.055"	.070"

Any size or assorted, \$15.00 Dozen

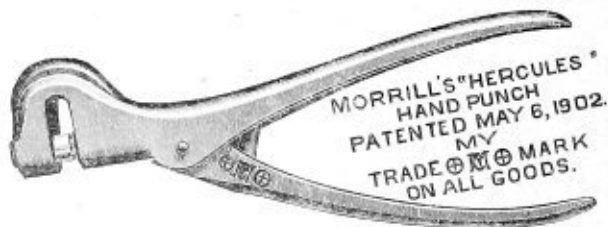


This punch is 7" long. It is made in 5 sizes. We do not recommend this punch for metal, although it will punch very thin sheet metal.

This punch will perforate with a slight grip of the hand any thickness from tissue to $\frac{1}{4}$ of an inch of leather, rubber, pasteboard, cloth, celluloid, veneering or other pliable substances.

Sizes (AA or 3-16 inch) (A or 5-32 inch) (B or $\frac{1}{8}$ inch)
(C or 3-32 inch) (D or 1-16 inch)

All Sizes, \$15.00 Dozen



This punch is made expressly for cutting metals and is not recommended for paper or similar material. It will punch a $\frac{1}{4}$ inch hole through No. 18 gauge sheet iron or its equivalent.

Length of Punch $11\frac{1}{2}$ ".

All punches and dies are interchangeable. The depth of throat is one inch. The punch frame is made of steel and cannot be broken by hand pressure.

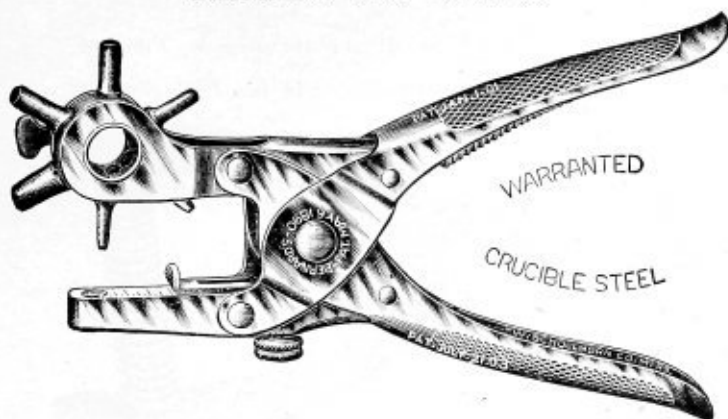
Sizes of dies that can be furnished:

Numbers E G H J K L M N P R S
Diameter $\frac{1}{16}$, $\frac{3}{32}$, $\frac{1}{8}$, $\frac{5}{32}$, $\frac{3}{16}$, $\frac{7}{32}$, $\frac{1}{4}$, $\frac{9}{32}$, $\frac{5}{16}$, $\frac{11}{32}$ and $\frac{3}{8}$ inch.

(Odd sizes between $\frac{1}{16}$ and $\frac{3}{8}$ inches on special order and price only.)

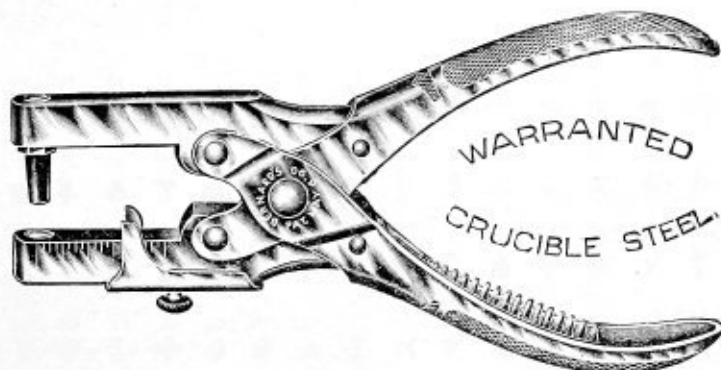
Punch with any one Regular Size Punch and Die, \$5.00

BERNARD'S BELT PUNCHES.



No. 186. Open Throat, Parallel Jaws, Full Nickel Plated.

Length 8 inches \$24.00 Dozen



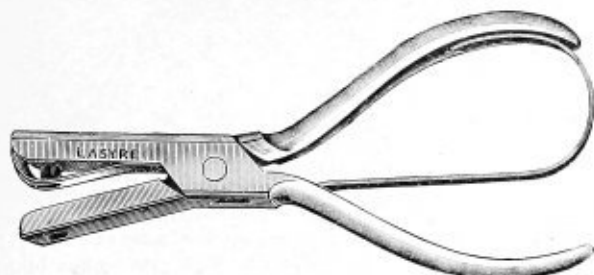
No. 171. With Best Steel "Screw" Tube and Adjustable Gauge. Open Throat, Parallel Jaws, Full Nickel Plated. The Gauge enables the User to Punch Holes at Uniform Distances.

Length 7 inches \$12.00 Dozen



Extra Tubes \$2.50 Dozen

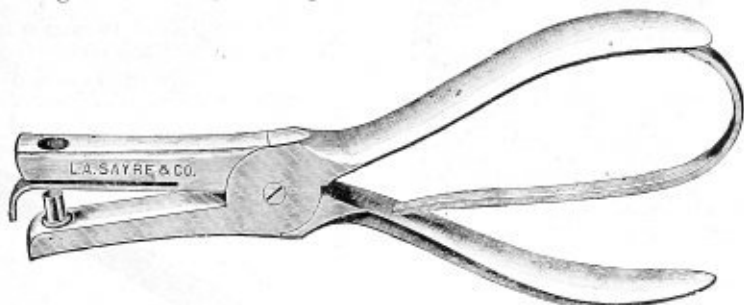
TICKET PUNCHES.



No. 36. (Polished.)
ROUND HOLE ONLY.
\$8.00 Dozen.

No. 37. (Polished.)
DESIGN DIES.
\$10.00 Dozen.

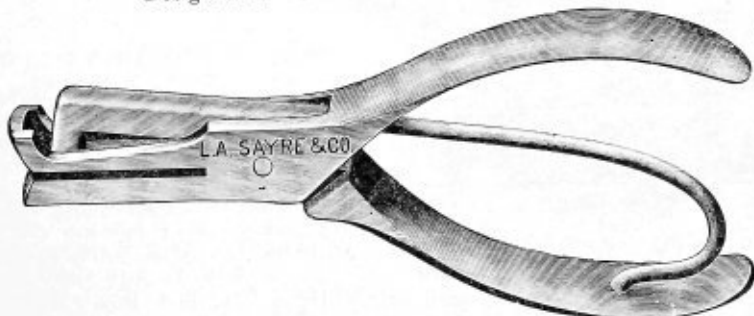
Length of Jaws $\frac{5}{8}$ ". Design Dies Limited to Illustrations Below.



No. 38. Length of Jaw $\frac{3}{4}$ in. Nickel Plated.....\$12.00 Dozen

No. 39. Length of Jaw $1\frac{1}{4}$ in. Nickel Plated.....18.00 Dozen

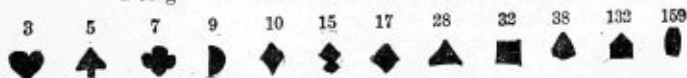
Design Dies Limited to Illustrations Below.



No. 430. Length of Jaw $\frac{3}{8}$ in. Polished.....\$ 8.00 Dozen

No. 435. Length of Jaw $\frac{7}{8}$ in. Nickel Plated..... 10.00 Dozen

Design dies limited to illustrations below.



Specify Design Wanted.

BENCH PUNCH AND SHEAR.

NEAT, STRONG AND DURABLE.

The "Federal" Punch we can thoroughly recommend as a neat and strong bench punch and compares favorably with any other on the market.

It is 10 inches high, 10 inches long, with lever 24 inches long, and weighs 64 lbs.

Punches a hole 5-16 inches through $\frac{1}{8}$ inch iron plate $2\frac{1}{2}$ inches from edge.

No. "A." Price with dies for one size hole.....\$15.00

COMBINED SHEAR AND PUNCH.

These machines are suitable for both cutting and punching metal. They may be used for cutting $\frac{1}{8}$ inch iron, and 3-16 and $\frac{1}{4}$ inch narrow bars. The No. 1 will punch the center of a circle $5\frac{1}{4}$ inches in diameter and the No. 2, $5\frac{1}{2}$ inches. Four punches are put up with No. 1, viz., $\frac{1}{8}$, $\frac{3}{16}$, $\frac{1}{4}$ and $\frac{5}{16}$ inch. Five punches are put up with No. 2, viz., $\frac{1}{8}$, $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$ and $\frac{3}{8}$ inch.

No. 1.	Shear and Punch, $4\frac{1}{2}$ inch cut, will punch $\frac{1}{8}$ inch iron. Weighs 100 lbs.	\$16.00
" 2.	Shear and Punch, $5\frac{1}{2}$ inch cut, will punch 3-16 inch iron. Weighs 120 lbs.	20.00
" 3.	Bed, Complete (Drilled and Fitted) for No. 1.....	8.00
" 4.	Bed, Complete (Drilled and Fitted) for No. 2.....	10.00
" 5.	Die Holder, for Nos. 1 or 2.....each,	1.00
" 6.	Extra Punches, for Nos. 1 or 2.....each,	.75
" 7.	Extra Dies, for Nos. 1 or 2.....each,	1.25

Always affix page number to the item number, viz.: 1 only, No. A-460.

HAND TALLY REGISTER.

Made in two styles. No. 0 and No. 1 recording to 1,000 and 10,000, respectively. Are the size of an ordinary watch and weigh about four ounces. Can be set to zero any time a new count is desired. Used by railroad, telegraph and steamboat men for checking or tallying ties, telegraph poles and passengers, and all kinds of freight; by cattlemen for counting cattle and sheep; by lumbermen, loggers and timber estimators; detectives and spotters, and at places of amusement for counting the people going in and out. In fact, they can be used for any purpose where a correct count is desired to be kept. We adapt this register to other uses besides hand tallying.

For telephone, office and factory use, we mount it on a bracket, so it can be secured to counter or desk. We also make it with

a safety pin attachment, and where it is not convenient to hold it in the hand, any number of them can be secured to the clothing or to a belt about the person of the user. In this way many articles can be checked by one person, and an accurate account kept, showing at a glance the actual number of each article registered.

Price of Hand Tally No. 0. \$2.50 each
 " " " " " 1. 3.50 "

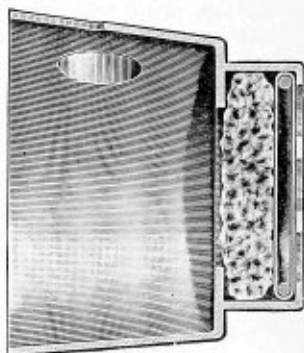


ACTUAL SIZE OF REGISTER.

Always affix page number to item number, viz.: 1 only, No. 0—461.

AUTOMATIC RUBBER RESPIRATOR.

FOR USE IN SMOKE, FUMES, VAPORS AND ALL KINDS OF DUST.



Section showing the Filter in position.

Patented August 27, 1901.

No. 1. Price\$24.00 per dozen

Upon receipt of \$2.00 one will be forwarded as a sample. It has only to be tried to be appreciated. Money will be refunded if not as represented.

"MIDGET" SMOKE PROTECTOR.

USED IN FIRE DEPARTMENTS, FACTORIES, MINES, ETC.



Smoke is frequently so intense that you can't get near the heart of the fire.

If you can't get at it you certainly can't put it out.

With a "Midget" you can practically disregard the smoke, and give your whole attention to putting out the fire.

The sponge acts as a filter, taking up all the impurities in smoke, gas, etc., permitting only the pure air to pass through to the nose and mouth.



No. 2.....\$3.50 complete

Including Goggles and Mouth Protector.

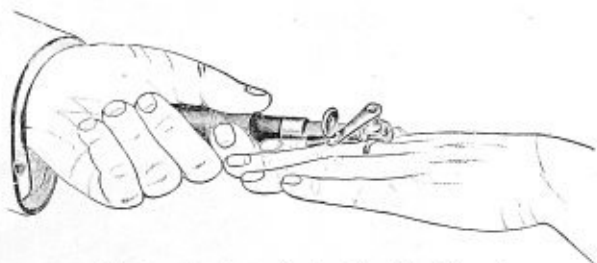
Write your orders this way, viz.: 1/2 Doz., No. 1—462.

K. & D. RING CUTTER No. 100.



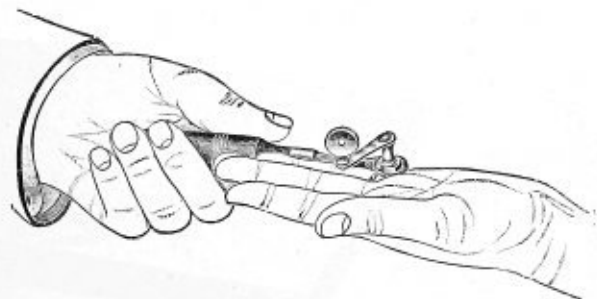
Price, \$2.50.

Every jeweler has been called upon to remove rings from injured or swollen fingers. With ordinary facilities it is a difficult and disagreeable task.



Showing tool applied at back of hand.

This cutter reduces what is a painful and often dangerous operation to the simple action of turning a crank.



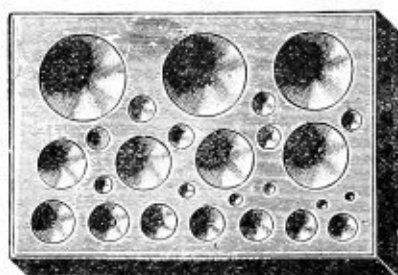
Showing tool applied inside hand.

The saw or cutter is entirely enclosed, making it proof against laceration or injury of the finger.

Always mention page number when ordering, viz.: 1 only, No. 100—463.

JEWELERS' BENCH BLOCKS.

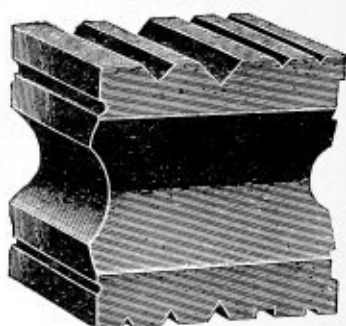
FLAT DAPPING DIE BLOCK.



Made of Iron. Smooth Finished.

No.	Size	With	Each
A.	4 1/8" x 2 7/8"	26 holes.....	\$2.00
B.	5 7/8" x 3 1/2"	32 holes.....	2.50

SHAPING BLOCK

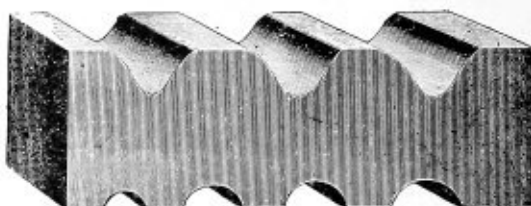


Made of steel, 2 1/4" square.

No. C.....\$15.00 each

RING BENDING BLOCK, WITH PUNCH.

DIMENSIONS
OF THIS
BLOCK ARE
APPROXIMATELY
6" x 3".

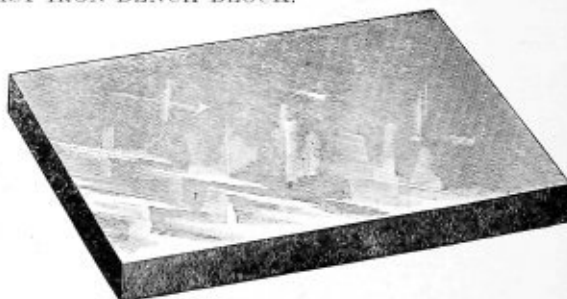


No. D. Block and Punch, complete.....\$3.00

CAST IRON BENCH BLOCK.

Made of superior quality pig iron. One side is accurately planed.

These blocks are made to order only.

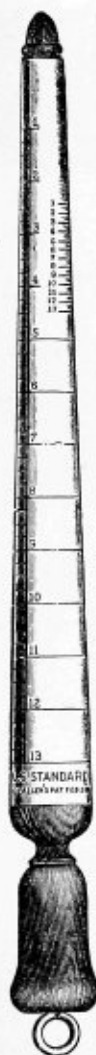


No. E.	10"	wide	x	12"	long	x	1 1/2"	thick.
" G.	12"	"	x	15"	"	x	2"	"
" H.	13"	"	x	18"	"	x	2 1/2"	"

Four cubic inches equal 1 pound.

Prices upon application.

RING STICKS AND SIZES.



No. 110. \$0.80
GENUINE
ALLEN'S
RING STICK.



No. 116. U. S. Standard..... \$0.90

No. 111. GENUINE ALLEN'S RING SIZES.

Well finished and nickel plated.....Price. \$1.00

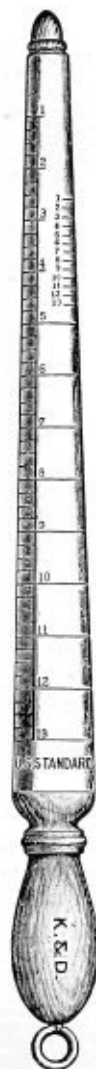
No. 110. GENUINE ALLEN'S RING STICK.

Accurately graduated nickel-plated brass shell on finely finished rosewood handle.

No. 115. U. S. STANDARD RING STICK.

The taper shell of these ring sticks is made by a special process.

The handle and tips are of rosewood, beautifully finished.



No. 115. \$0.70
U. S. STAND-
ARD RING
STICK.

Be sure to affix page number to every item number—viz.:

$\frac{1}{2}$ Doz. No. 111—465.

OLIVER'S RING STRETCHER AND BENDER.



No. 3.

.16x.075
.35x.046


No. 1.

For Flat Rings



No. 2.

.12x.055
.40x.053

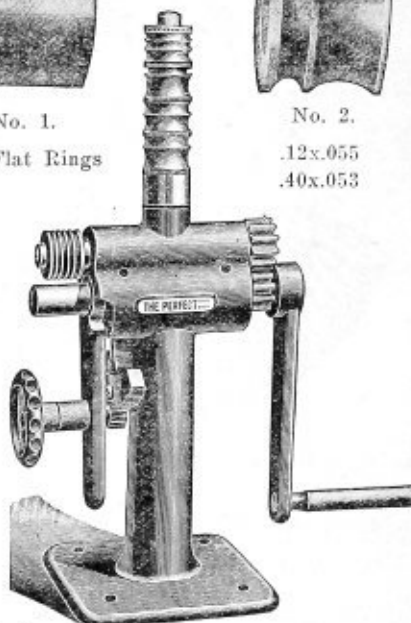

No. 4.

.25x.033
.30x.040


No. 6.

.12 x.025
.105x.025
.09 x.025
.075x.025
.06 x.025


No. 5.

.10x.013
.15x.020
.20x.026


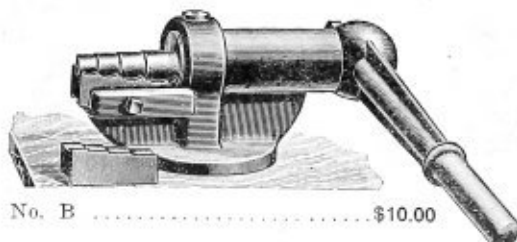
No. A\$10.00

Each stretcher is provided with six hardened and highly polished steel rolls.

Stock Rolls as above, separate (Huckle).....\$0.50

Special Rolls to order, single grooves.....\$0.75
Extra Grooves in same roll.. .25

"Little Giant" Ring Bender.



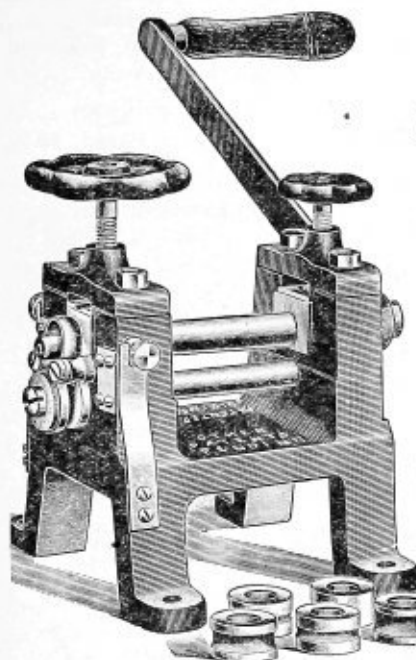
No. B\$10.00

This machine is adapted for the bending of both half-round, and chased rings, and will do the work better and in one-tenth part of the time usually consumed in this work.

Order by respective number and be sure to affix page number.

PECKHAM'S

RING EXPANDER.



No. "C".....\$16.00

Including 8 Steel Rollers.

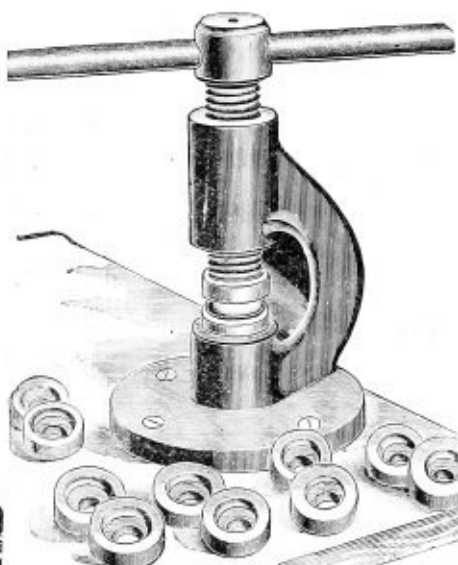
Base, 5 x 5½ in. Height, 7 in.

This machine will stretch Seamless Rings to almost any size in a few minutes, and soldered plain rings, stone set rings and diamond mountings several sizes **without** losing their shape, and the ring will remain **perfectly round** after being stretched.

Note.—Complete instructions sent with each machine.

Affix page number to item number sure, viz.: 1 only No. D—467.

RING CONTRACTOR.



No. "D".....\$16.00

Including 12 Steel Dies.

Diameter of base, 5 in. Height, 8 in.

The dies are numbered 1, 2, 3, 4, 5 and 6 resp., covering the full range of sizes required.

Die No.

- | | |
|------------------------------|-----------|
| 1 will reduce ring from Size | 5 downw. |
| 2 will reduce ring from Size | 6 downw. |
| 3 will reduce ring from Size | 7 downw. |
| 4 will reduce ring from Size | 8 downw. |
| 5 will reduce ring from Size | 9 downw. |
| 6 will reduce ring from Size | 10 downw. |

ROUGE FOR ALL REQUIREMENTS.

"LAFAYETTE".....Per Pound, \$0.25

A hard rouge for gold and silver. Oblong cakes about 1 lb. each, superior quality. Extremely reasonable in price. Handy to use, with little waste. We recommend it to give good satisfaction.

"XXG".....Per Pound, \$0.35

This is a standard well known hard rouge for gold and silver, producing a high color or finish particularly on gold work. $\frac{1}{4}$ lb. and $\frac{1}{3}$ lb. sticks. $\frac{1}{3}$ lb. sticks sent unless specified.

"BLACK ROUGE"..Per Pound, \$0.35

A hard rouge of high quality for gold and silver. $\frac{1}{4}$ lb. sticks.

"GX".....Per Pound, \$0.30

A hard rouge of very high quality for general all-around use. This is equal to many other higher priced brands. $\frac{1}{2}$ lb. sticks.

"J".....Per Pound, \$0.20

A hard rouge for gold and silver. Principally used on novelty work where not too high a color or finish is required. $\frac{1}{2}$ lb. sticks.

"SXX".....Per Pound, \$0.20

A hard rouge for brass bedstead and similar work. $\frac{1}{2}$ lb. sticks.

"N".....Per Pound, \$0.15

A hard rouge for brass or nickel work. 2 lb. sticks.

"XXSX".....Per Pound, \$0.60

A soft rouge for polishing watch cases. This is our standard grade. Supplied in either lump or powdered form. Specify which you want.

"XXXX".....Per Pound, \$0.50

A soft rouge for polishing watch cases. Supplied in powdered form only.

"XXG SOFT".....Per Pound, \$0.35

A good jeweler's rouge for ordinary work.

Note.—This same grade supplied in powdered form. Be sure to specify same if wanted.

"GX".....Per Pound, \$0.30

A soft rouge for jewelers' use where a high grade is not required. This will give good satisfaction.

"BALL OPTICAL ROUGE"

Per Pound, \$0.60

This is a special rouge for polishing optical lenses. Balls weigh about two ounces each.

"XXXS".....Per Pound, \$0.60

A hard rouge for silver. Best grade made for the purpose. $\frac{1}{2}$ lb. and 1 lb. sticks. Specify which to send.

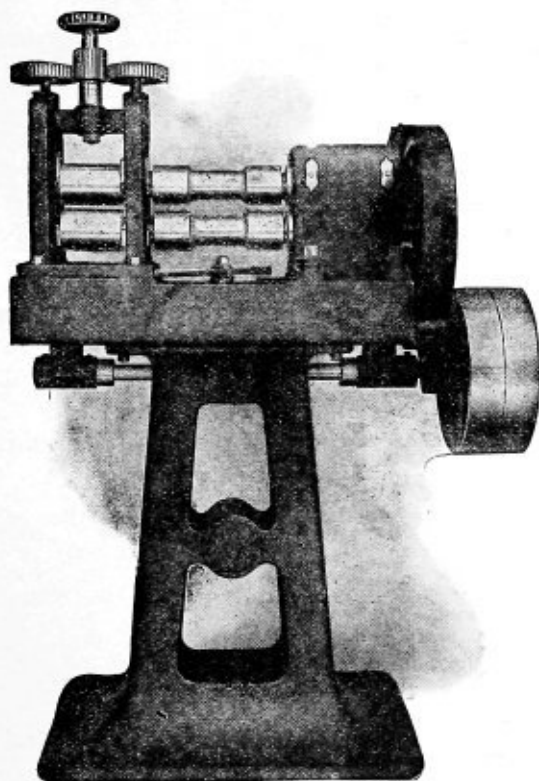
"S".....Per Pound, \$0.45

A hard rouge for silver. Fair quality for ordinary work. $\frac{1}{2}$ lb. sticks.

Special price for quantity orders.

IMPROVED TRIPLE-GEARED POWER ROLLING MILLS.

With Toggle Connections and Flat Rolls.



The illustration shown here represents the No. 4A T. G. Power Rolling Mill, the newest addition to the Oliver Quality line of Rolling Mills. This is an unusually powerful machine, designed to meet the severest requirements.

An absolute uniform motion of the rolls, essential for the production of perfectly smooth stock, is obtained by the use of toggle connections.

The Rolls are easily interchangeable, and are ground and lapped to a mirror finish.

The Tight and Loose Pulleys are 12 in. in diameter for $2\frac{1}{4}$ in. belt, and should run about 300 revolutions per minute.

No. 4A—(Figment). Price on application. Rolls, $2\frac{3}{4}$ in. diam. x 4 in. long. Always affix page number to item number when ordering—viz., 1 only No. 4A—469.

IMPROVED TRIPLE-GEARED POWER ROLLING MILLS.

With Flat Rolls.

This illustration represents the No. 4 T. G. Power Rolling Mill. An ideal rolling mill for the small manufacturing jeweler, whose floor space is very limited.

The rolls are easily interchangeable.

The Gears on the rolls are connected by means of two idler gears in the rear, and all four gears have spiral cut teeth. This insures perfectly smooth work in the stock rolled. All gearing is completely covered; ratio, 11 to 1.

The Tight and Loose Pulleys are 12 in. in diameter for $2\frac{1}{4}$ in belt, and should run about 300 revolutions per minute.

No. 4—(Fanion). Price.....\$140.00

Rolls— $2\frac{3}{4}$ in. diam. x 4 in. long.

**IMPROVED TRIPLE-GEARED POWER
ROLLING MILLS**

Direct-Connected Electric Motor Driven
With Toggle Connections and
Flat Rolls

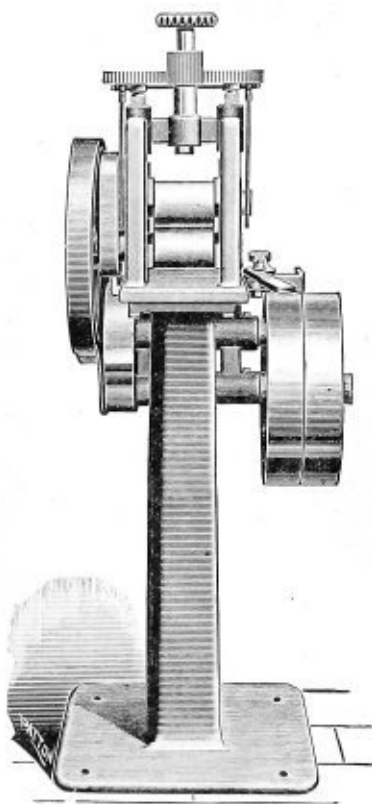
**IMPROVED TRIPLE-GEARED POWER
ROLLING MILLS**

With Toggle Connections and Flat Rolls

**IMPROVED TRIPLE-GEARED POWER RE-
VERSING ROLLING MILLS**

With Toggle Connections and Flat Rolls

PRICES UPON APPLICATION

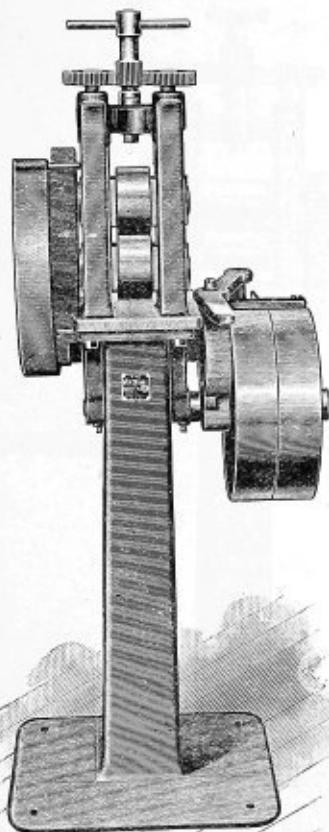


The modern method of driving machinery, particularly rolling mills, is by means of direct-connected electric motors which possess many points of superiority when compared to the old method of drive belts and countershafts from a line shaft.

When ordering affix page number to item number—viz., 1 only No. 4—470.

UNIVERSAL POWER ROLLING MILLS.

Triple Geared.



In the production of silver ware, metal art work, and ornamental work of various kinds this triple-gear Universal Mill will be found extremely profitable. It is strongly built and powerfully geared,

The Collar Rolls are removed by bringing the indicator marks together and drawing out the shafts to the left.

All Gearing is completely covered.

The Tight and Loose Pulleys are 13 in. in diameter for $2\frac{1}{2}$ in. belt, and should run about 250 revolutions per minute.

Ratio of gearing, 14 to 1.

No. 6—(Faldage). Price.....\$140.00

Rolls—4 in. diam. x 2 in. long.

Extra blank rolls, ready for engraving (Prith), each \$7.00.

UNIVERSAL DOUBLE-GEARED POWER ROLLING MILLS.

The Tight and Loose Pulleys are 12 in. in diameter for $2\frac{1}{4}$ in. belt, and should run about 150 revolutions per minute.

Ratio of gearing, 6 to 1.

No. 3—(Fake). Price.....\$75.00

Rolls— $2\frac{1}{4}$ in. diam. x $1\frac{1}{4}$ in. long.

Extra blank rolls ready for engraving (Faquir), each \$1.75.

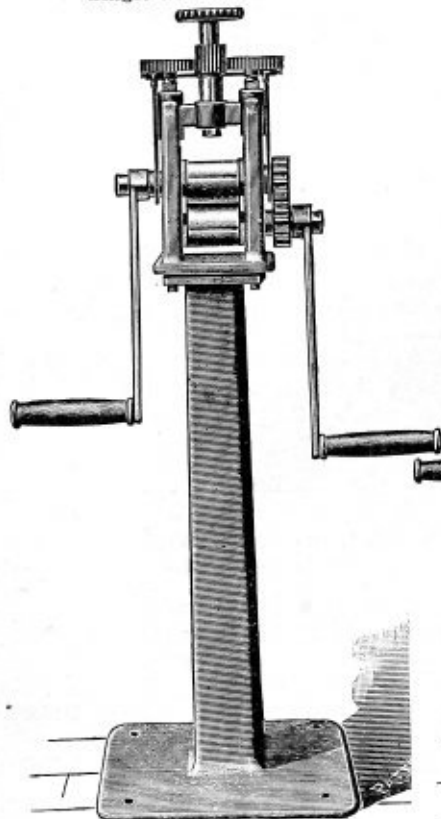
This mill has individual adjusting screws of the old style type.

NOTE: Oliver's Mills are the recognized Standard Jewelers' Mills.

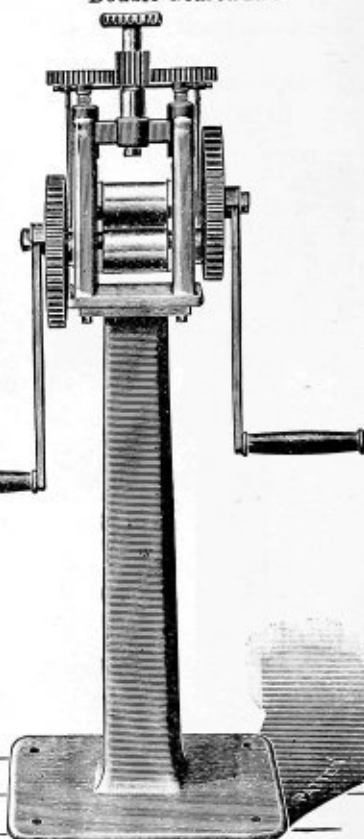
OLIVER'S HAND ROLLING MILLS.

With two flat rolls, made from finest crucible steel, carefully hardened, ground, and polished. Fully warranted.

Single-Gear'd Mill.



Double-Gear'd Mill.



No. 2—(Fabian). Price.....\$30.00

Rolls—1½ in. diam. x 2 in. long.

No. 3—(Fable). Price.....\$50.00

Rolls—2¼ in. diam. x 3 in. long.

No. 4—(Fabrie). Price.....\$75.00

Rolls—2¾ in. diam. x 4 in. long.

Gearing Ratio, 4 to 1.

No. 3D—(Face). Price.....\$75.00

Rolls—2¼ in. diam. x 3 in. long.

No. 4D—(Faect). Price.....\$100.00

Rolls—2¾ in. diam. x 4 in. long.

These Mills are built from newly-designed patterns, are heavy and well proportioned, with many desirable improvements.

All mills are fitted with wrought steel pinions and bronze boxes.

Be sure to affix page number to each item number, viz.: 1 only No. 3D—472.

PLAIN HAND ROLLING MILL WITH FLAT ROLLS.

A Rolling Mill especially adapted for light work. It is extremely well made, the rolls being of crucible steel, nicely hardened, ground and polished. The pinions are cut from steel bar. The rolls can be quickly removed from the frame.

Price, as in cut (Farina), **\$30.00.**

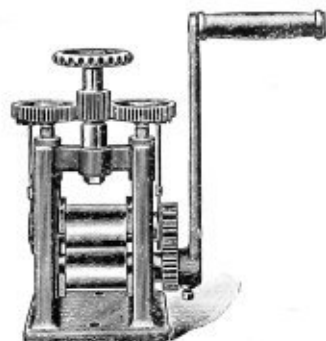
Rolls—2" diam. x 3" long.

Net Weight—45 lbs.

MOUNTED ON COLUMN.

No. 1. Price (Firkin), **\$38.00.**

Net Weight—110 lbs.



UNIVERSAL DOUBLE-GEARED HAND ROLLING MILLS.

In the manufacture of band rings, settings, headings, etc., it is preferable to use a mill specially adapted for that work.

Our Universal style of mills are used for that purpose. The rolls are made in form of collars, mounted on keyed shafts.

The Lower Roll is removed by bringing the indicator marks together, and then drawing the shaft out to the left.

The Upper Roll is removed by taking off the pinion gear at the left, and drawing out the shaft to the right.

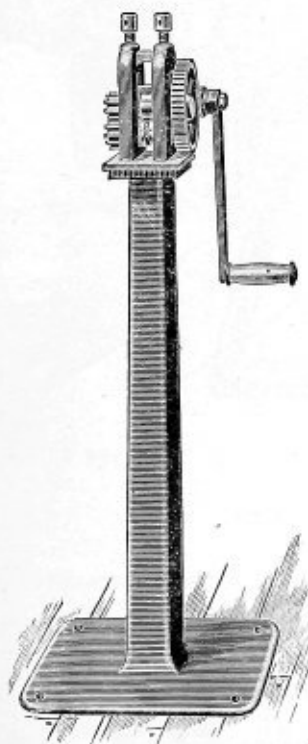
Ratio of gearing, 3 to 1.

No. 2—(Fair). Price.....**\$35.00**

Rolls—1½" diam. x ¾" long.

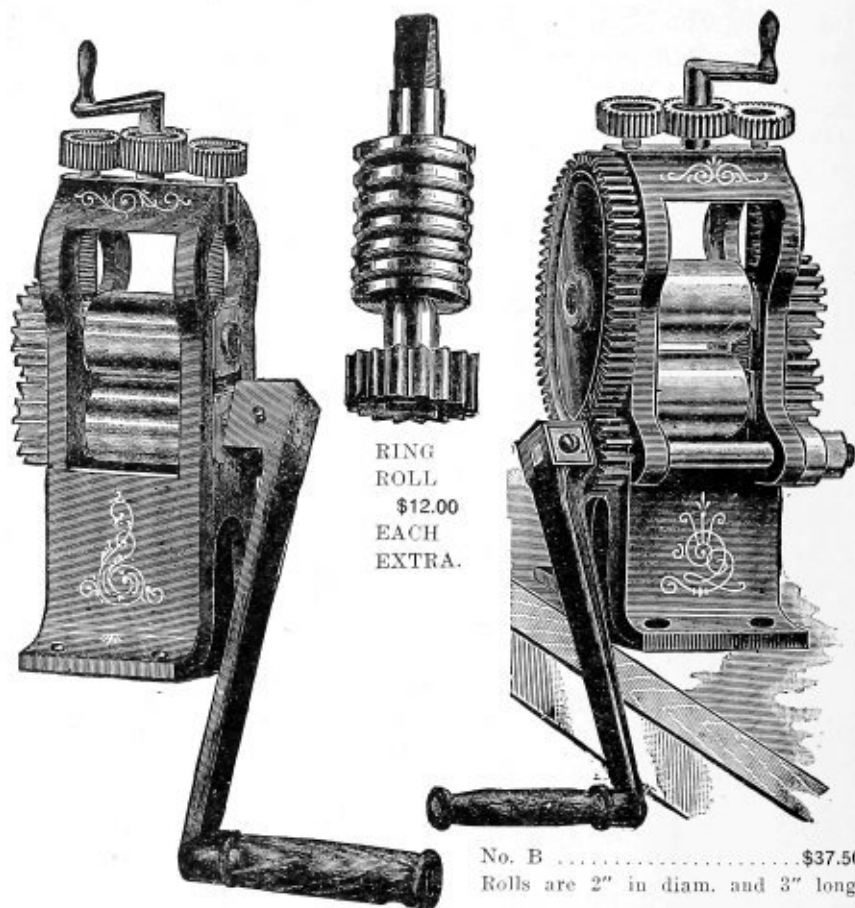
Extra blank rolls, ready for engraving

(Faith), each**\$0.75**



Write all orders this way—viz., 1 only No. 1—473.

CROCKER'S HAND ROLLING MILLS.



Every Roll is carefully hardened, perfectly ground and bearings made of bronze metal.

Ring Roll has six grooves, ranging from 3-16 to $\frac{3}{8}$ inch in diameter.

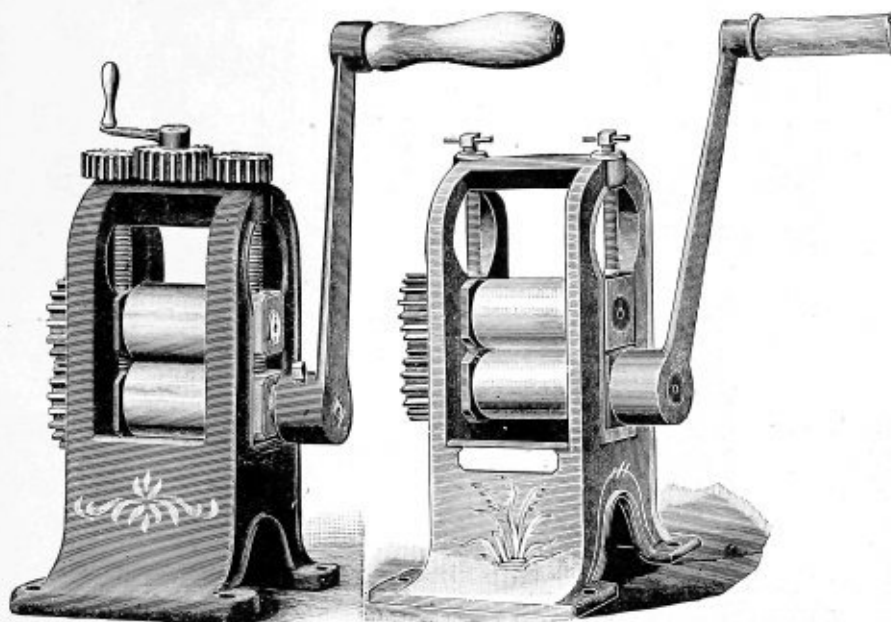
No. 2 Mill, \$20.00. This mill is the same in design as the No. 3, but it has the Old Style Single Head Screws. Rolls 2"x $\frac{3}{4}$ ".

Use our New System in writing orders.

SPENCER'S
HAND ROLLING MILLS.

NEW STYLE HEAD SCREWS.

OLD STYLE HEAD SCREWS.



STYLE No. 2.
\$20.00.

STYLE No. 1.
\$15.00.

RING ROLL made to fit either of above
machines,

\$5.00 each, extra.

The Rolls are made of a fine quality of tool steel—hardened and ground.

Each mill is fully warranted for one year, and any parts broken in fair usage will be replaced.

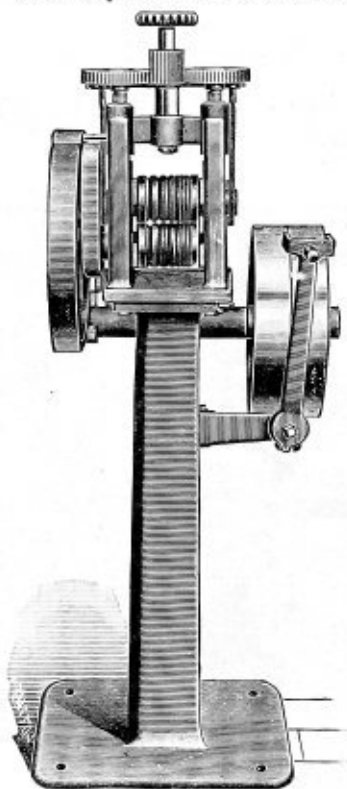
The body is made of heavy cast iron, one piece, nicely japanned and decorated in gold.

Write your orders thus—1 only No. 1—475.

IMPROVED DOUBLE-GEARED POWER ROLLING MILLS.

The Gears are machine cut from solid stock, and are completely covered.

WITH SQUARE WIRE ROLLS.



No. 3—(Falsar). Price.....\$95.00

Rolls—2¼" diam. x 3" long.

No. 4—(Fangot). Price.....\$120.00

Rolls—2¾" diam. x 4" long.

Details for all mills priced on this page.

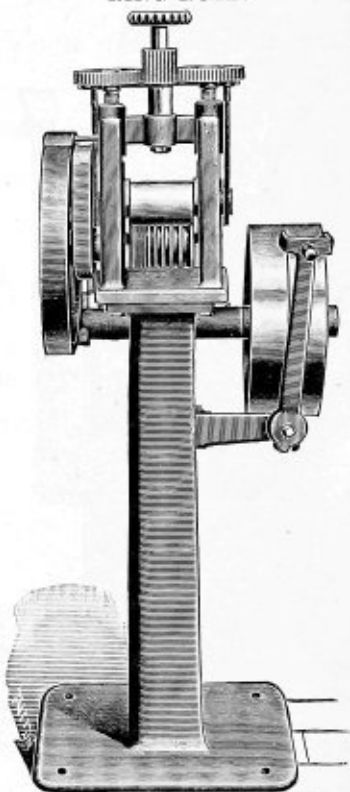
RATIO OF GEARING.

No. 3 Sizes.....5¼ to 1

" 4 "6¼ " 1

The tight and loose pulleys are 12" in diameter for 2¼" belt, and should run about 150 revolutions per minute.

WITH ONE FLAT AND ONE RING ROLL.



These mills are made for rolling square wire and ring stock; they are not intended for use in rolling flat stock, on account of the limit of space between rolls and the power that can be produced.

The Rolls are easily interchangeable.

No. 3R—(Fallow). Price....\$92.00

Rolls—2¼" diam. x 3" long.

No. 4R—(Fand). Price.....\$115.00

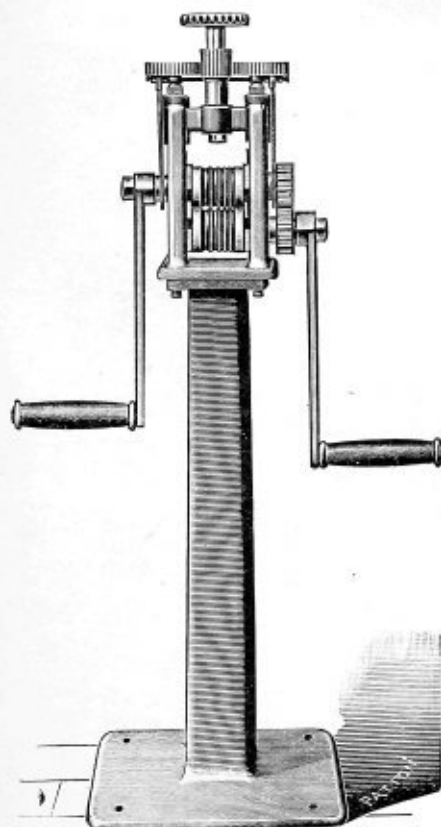
Rolls—2¾" diam. x 4" long.

Write your order thus—1 only No. 3—476.

HAND ROLLING MILLS WITH SQUARE WIRE ROLLS.

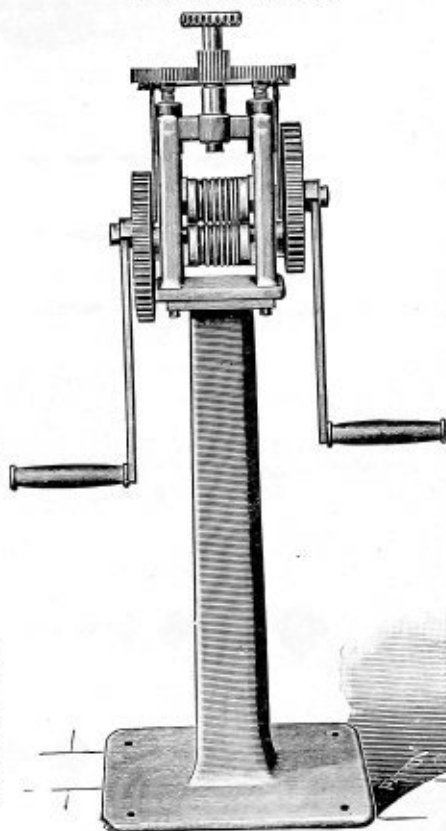
The Close Fitting of rolls between the boxes in mills used for rolling square wire is essential to the production of perfect wire.

SINGLE GEARED.



- No. 2—(Fade). Price.....\$36.00
Rolls—1½" diam. x 2" long.
No. 3—(Fadge). Price.....\$56.00
Rolls—2¼" diam. x 3" long.
No. 4—(Fagot). Price.....\$85.00
Rolls—2¾" diam. x 4" long.

DOUBLE GEARED.



- No. 3D—(Fail). Price.....\$81.00
Rolls—2¼" diam. x 3" long.
No. 4D—(Faint). Price.....\$110.00
Rolls—2¾" diam. x 4" long.

Use new way of writing orders, viz.: 1 only, No. 3—477.

EXTRA ROLLS
FOR HAND OR POWER MILLS.
PLAIN RING ROLLS.



The illustrations below show the Standard shapes and sizes of grooves (respectively) in plain ring rolls.

For No. 2 Mill.—	1½"	diam. x 2"	long, single	(Fill).	Price, \$10.00
" " 3 "	—2¼"	" " x 3"	" "	(Facia).	" 15.00
" " 4 "	—2¾"	" " x 4"	" "	(Fault).	" 25.00

No. 2. 

No. 3. 

No. 4. 

SQUARE WIRE ROLLS.



Illustrations below show the Standard sizes of grooves (respectively) in square wire rolls.

No. 2-S.—	1½"	diam. x 2"	long, per pair	(Fond).	Price, \$20.00
" 3-S.—	2¼"	" " x 3"	" "	(Facto).	" 30.00
" 4-S.—	2¾"	" " x 4"	" "	(Fagen).	" 50.00

No. 2-S. 

No. 3-S. 

No. 4-S. 

No extra charge made on gears attached to grooved rolls for hand mills.

Large gear No. 3 Power Mills (Fusée)..Price, \$4.00

" " " 4 " " (Fusty)... " 4.00

In Square Wire Grooves the bottoms are slightly rounded, and by giving the stock a quarter turn as it is passed to the next groove all difficulty of roughness and cracking is overcome, and perfect wire produced.

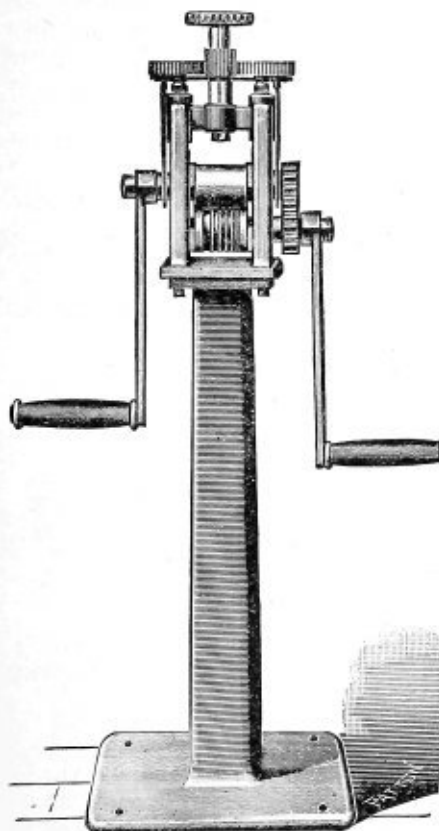
IMPROVED HAND ROLLING MILLS WITH ONE FLAT AND ONE RING ROLL.

The Grooves in our ring rolls are made with special care and will produce perfectly uniform stock which can be finished with the minimum amount of cost and waste.

Standard Sizes and Shapes will be furnished, unless otherwise ordered.

"SINGLE GEARED."

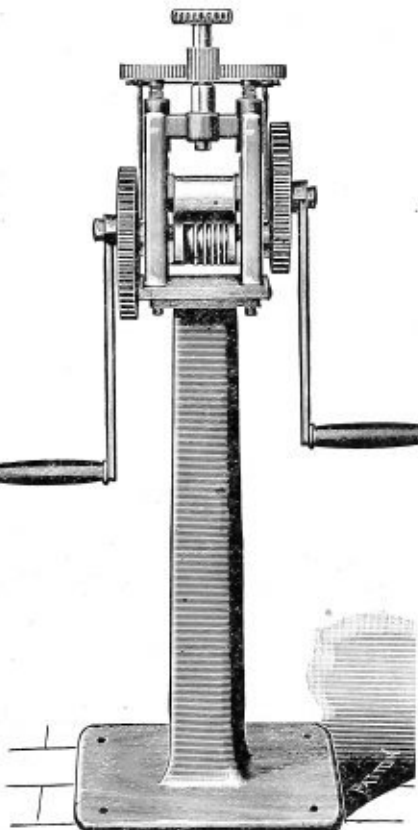
"DOUBLE GEARED."



No. 2—(Facial). Price.....\$33.00
Rolls—1½" diam. x 2" long.

No. 3—(Facing). Price.....\$53.00
Rolls—2¼" diam. x 3" long.

No. 4—(Fact). Price.....\$80.00
Rolls—2¾" diam. x 4" long.



No. 3D—(Factor). Price.....\$78.00
Rolls—2¼" diam. x 3" long.

No. 4D—(Faddle). Price...\$105.00
Rolls—2¾" diam. x 4" long.

Special Grooved Rolls can be furnished when our standard shapes will not answer.

Write your orders the new way.

STARRETT'S STANDARD STEEL RULES

Are made to agree with accurate Standards furnished by the
United States Government.



These rules are made the same width and thickness as No. 300. Special attention is called to the fact that these rules are figured so as to assist the user to quickly read the 64ths, as shown by the cut.

No. 600 has No. 4 graduation, which consists of 8ths and 16ths on one side, and 32ds and 64ths on the other.

No. 603 has No. 4 graduation and is graduated in 32ds of an inch on both ends of one side.

The No. 600 are made in 1 inch to 24 inch lengths inclusive, and the No. 603 in 2 inch to 24 inch lengths inclusive.

Approximate

thickness: $\frac{3}{64}$ in., or No. 18 gauge.

Approximate

widths:	Inches, $\frac{1}{2}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$
Lengths:	"	1	2	3	4	6	9	12	24
Prices.....	\$0.15	.25	.35	.45	.65	1.00	1.25	2.00	2.50
Number.....	A	B	C	D	E	G	H	J	K



HEAVY
SPRING-
TEMPERED

Thickness, about $\frac{1}{10}$ inch.

Widths: About, inches,	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{4}$	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{1}{2}$
Lengths: Inches,	6	9	12	18	24	36	48
Prices.....	\$0.65	1.00	1.25	2.00	2.50	5.00	7.00
Number.....	L	M	N	P	R	T	V

No. 410. Heavy, Spring-Tempered, No. 4 graduation.

No. 417. " " No. 7 " "

Write your orders this way:

1 only No. L—410—480,

or 1 only No. E—603—480.

By this method we cannot err.

STARRETT'S STANDARD STEEL RULES.

Are made to agree with accurate Standards furnished by the United States Government.



FLEXIBLE

These are very thin spring-tempered rules, nicely graduated on one side only. Those from 1 inch to 12 inches are $\frac{1}{16}$ inch wide, and will easily conform to a 2-inch circle. Those from 18 inches to 48 inches are $\frac{3}{16}$ inch wide, and are made from a trifle heavier stock.

Lengths:	Inches, 1	2	3	4	6	9	12	18	24
Prices	\$0.15	.25	.35	.45	.65	1.00	1.25	2.00	2.50
Number	A	B	C	D	E	G	H	J	K

No. 320.	Flexible,	No. 10 graduation.	(32ds and 64ths.)
No. 321.	"	No. 11	" (64ths and 100ths.)
No. 322.	"	No. 12	" (50ths and 100ths.)
No. 323.	"	No. 13	" (8ths and 16ths.)
No. 324.	"	No. 14	" (8ths and 32ds.)



SEMI-FLEXIBLE

These rules are about 1/40 inch thick, heavier than the Flexible Rules and lighter than the Spring-Tempered Rules. They are of the same widths as the corresponding lengths of Spring-Tempered Rules.

Lengths:	2 in.	3 in.	4 in.	6 in.	9 in.	12 in.
Prices:	\$0.25	.35	.45	.65	1.00	1.25
Number	L	M	N	P	R	S

No. 325 Semi-Flexible, No. 4 graduation, and graduated in 32ds of an inch on both sides of one end.



NARROW

About 3/16 inch wide. No. 18 gauge, spring-tempered, graduated one corner each side whole length, either in 32ds and 64ths, 50ths and 100ths, or 64ths and 100ths.

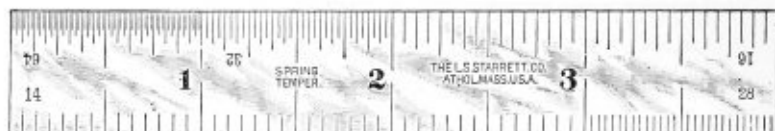
Lengths:	4 in.	6 in.	9 in.	12 in.
Prices:	\$0.45	.65	1.00	1.25
Number	T	U	V	W

No. 330.	Narrow,	No. 10 graduation.	(32ds and 64ths.)
No. 331.	"	No. 11	" (64ths and 100ths.)
No. 332.	"	No. 12	" (50ths and 100ths.)

Order by our new System—viz., 1 only No. P—325—481.

STARRETT'S STANDARD STEEL RULES

Are made to agree with accurate Standards furnished by
the United States Government.



Rules are divided into parts of inches as follows:

No. 1 Graduation		No. 2 Graduation		No. 4 Graduation	
1st corner	10, 20, 50, 100	1st corner	10, 20, 50, 100	1st corner	.....64
2d "	12, 24, 48	2d "	12, 24, 48	2d "	.....32
3d "	16, 32, 64	3d "	16, 32, 64	3d "	.....16
4th "	14, 28	4th "	8	4th "	.....8
No. 6 Graduation		No. 7 Graduation		No. 10 Graduation	
1st corner	.....32	1st corner	.....64	1st corner	.....32
2d "	.....48	2d "	.....32	2d "	.....64
3d "	.....50	3d "	.....16		
4th "	.....64	4th "	.....100		
No. 11 Graduation		No. 12 Graduation		No. 13 Graduation	
1st corner	.....64	1st corner	.....50	1st corner	.....8
2d "	.....100	2d "	.....100	2d "	.....16
No. 14 Graduation		No. 15 Graduation		No. 16 Graduation	
1st corner	.....8	1st corner	.....10	1st corner	.....32
2d "	.....32	2d "	.....20	2d "	.....64
		3d "	.....50	3d "	.....50
		4th "	.....100	4th "	.....100

SPRING-TEMPERED RULES.

Thickness: 3/64 in. or No. 18 gauge.



No. 300 has	No. 4	Grad.
No. 301 "	No. 1	"
No. 302 "	No. 2	"
No. 306 "	No. 6	"
No. 307 "	No. 7	"
No. 308 "	No. 15	"
No. 309 "	No. 16	"

Approximate

widths: Inches,	1/2	1/2	9/16	5/8	3/4	7/8	1	1 1/8	1 1/4
Lengths: "	1	2	3	4	6	9	12	18	24
Prices:	\$0.15	.25	.35	.45	.65	1.00	1.25	2.00	2.50
Number	A	B	C	D	E	G	H	J	K

No. 303 has No. 4 graduations and is graduated in 32ds of an inch on opposite sides of one end.

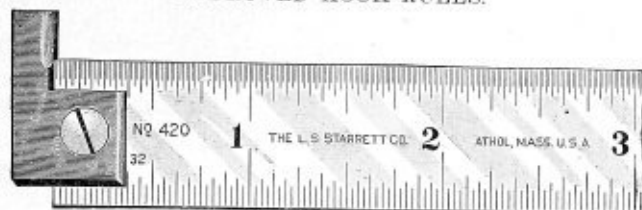
No. 304 has No. 4 graduations, and is graduated in 32ds of an inch on one side and in 48ths on the other side of the same end.

Widths and thickness same as listed above. Prices same as above.

Nos. 303 and 304 are made in 2 in. to 24 in. lengths only, inclusive.

Order this way—1 only No. H—300—482.

IMPROVED HOOK RULES.



Very convenient in taking measurements from round corners, through hubs of pulleys, setting inside calipers, etc. The 6 inch may be carried in the pocket. The hook can be quickly removed by turning eccentric stud one half round.

Lengths:	6 in.	9 in.	12 in.	18 in.	24 in.
Prices:	\$1.00	1.40	1.75	2.50	3.00
Number	A	B	C	D	E

No. 419 Our No. 303 Rule, No. 4 graduation, with hook and with end graduation.

No. 420 Our No. 300 Rule, No. 4 graduation, with hook.

No. 421 " No. 410 " No. 4 " " "

NARROW HOOK RULES



These rules are designed for use in taking measurements through small holes where our regular hook rules cannot be used. They can also be used for setting inside calipers, etc. Measurements through holes as small as $\frac{3}{8}$ inch can be obtained.

The rules are graduated one side in 32ds and the other in 64ths of an inch.

No. 422 Our No. 330 Rule, with hook.

Lengths:	4 in.	6 in.	9 in.	12 in.
Prices:	\$0.70	.90	1.25	1.50
Number	G	H	J	K

Write your orders by our new system. Then you cannot err, viz.: 1 only, No. C-419-483. This tells us the length of the rule, the graduation of the rule and the page on which same is listed in this catalog.

METRIC RULES



Showing Rule with Metric Graduation Only.



Showing Rule with English and Metric Graduations.

Lengths—

CM	5	10	15	20	25	30	40	50	60	80	1 M
Decimals	1.968	3.937	5.905	7.874	9.842	11.811	15.748	19.685	23.622	31.496	39.370
Each	\$0.25	.45	.65	.85	1.05	1.25	1.65	2.00	4.00	5.60	7.00
Number	A	B	C	D	E	G	H	J	K	L	M

All styles same price.

SPRING-TEMPERED

No. 340. Graduated three corners in millimeters, one corner in $\frac{1}{4}$ mm.

No. 341. From 5 to 15 cm., inclusive, graduated three corners in millimeters, one corner in $\frac{1}{2}$ mm. one corner in $\frac{1}{5}$ mm. Above 15 cm., graduated in $\frac{1}{5}$ mm. on 5 cm. of one corner, the rest of that corner and the other corners in millimeters.

No. 350. Graduated one corner each in millimeters, $\frac{1}{2}$ mm., 32ds and 64ths, all sizes.

No. 351. First corner graduated in $\frac{1}{2}$ mm., second corner in 1 mm., third corner in $\frac{1}{64}$ in., fourth corner in $\frac{1}{100}$ in., up to and including 15 cm. Above 15 cm., 2 inches of third corner graduated in 64ths, the rest of that corner in 16ths. Two inches of fourth corner graduated in 100ths, the rest of that corner in 50ths.

FLEXIBLE

No. 345. Graduated one edge in millimeters, the other in $\frac{1}{4}$ mm.

No. 346. From 5 to 15 cm., inclusive, graduated one corner in millimeters, the other corner in 1/5 mm. Above 15 cm., graduated in 1/5 mm. on 5 cm. of one corner, the rest of that corner and the other corner graduated in millimeters.

No. 355. Graduated one edge in millimeters, the other in 64ths.

No. 356. Graduated one edge in $\frac{1}{2}$ millimeters, the other in 100ths, sizes up to 15 cm. Sizes above 15 cm. graduated one edge in $\frac{1}{2}$ millimeters, the other edge 2 in. in 100ths, balance in 50ths.

NARROW

No. 347. Graduated one side in millimeters, the other in $\frac{1}{4}$ mm.

No. 357. Graduated one edge in millimeters, the other in 64ths

No. 358. Graduated one edge in millimeters, the other in 100ths.

Widths and thicknesses same as Standard Rules respectively.

Write your orders thus:

1 only No. G—350—484,
or 1 only No. D—355—484.

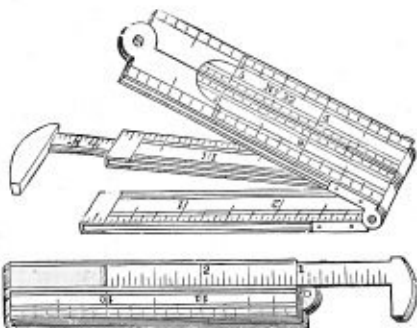
BOXWOOD CALIPER RULES

SIX INCH
SQUARE JOINT
TWO FOLD

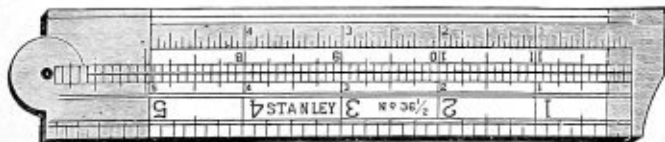
		Per Doz.
No. 36	8ths, 10ths, 12ths and 16ths inches..... $\frac{7}{8}$ in. wide	\$4.50
" 13	8ths and 16ths inches..... $1\frac{1}{8}$ in. wide	5.50
" $13\frac{1}{2}$	8ths and 16ths inches..... $1\frac{1}{2}$ in. wide	6.50
" 14	Bound, 8ths, 10ths, 12ths and 16ths inches..... $\frac{7}{8}$ in. wide	8.00

CALIPER, ONE FOOT, FOUR FOLD

No. 32	Arch Joint, Edge Plates, 8ths, 10ths, 12ths and 16ths inches, 1 in. wide, dozen	\$7.00
" $32\frac{1}{2}$	Arch Joint, Bound, 8ths, 10ths, 12ths and 16ths inches, 1 in. wide, doz.	10.00
" 3	Square Joint, Bound, 8ths and 16ths inches, $\frac{5}{8}$ in. wide, dozen	12.00



CALIPER, ONE FOOT, TWO FOLD



No. $36\frac{1}{2}$	Square Joint, Two Fold, 8ths, 10ths, 12ths and 16ths of inches, $1\frac{3}{8}$ in. wide, Left Hand Caliper, dozen.....	\$6.50
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Note.—All Caliper Rules are regularly made with Caliper Left Hand, as shown in cut of No. 36. When ordered with Caliper Right Hand, as shown in cut of No. $36\frac{1}{2}$, an additional charge of twenty-five cents per dozen net, will be made. The Caliper of all Caliper Rules is regularly graduated in 16ths, but can be furnished in 32ds, without additional charge, if so ordered.

Order by respective numbers and be sure to affix its page number viz.:
 $\frac{1}{2}$ Doz. No. $36\frac{1}{2}$ —485.

IVORY CALIPER RULES.



This illustration represents a 6" two-fold Rule.

No. 38. Each, \$1.50. 6" long x $\frac{7}{8}$ " wide; has a square joint, German silver plates, graduated in 10ths, 12ths and 16ths of inches.

No. 40. Each, \$2.40. 6" long x $\frac{5}{8}$ " wide; has a square joint, is full German silver bound, graduated in 8ths and 16ths of inches only.



This illustration represents a 1 foot four-fold Rule.

No. 39. Each, \$3.80. Has a square joint, German silver edge plates, is $\frac{7}{8}$ " wide, and graduated in 8ths, 10ths, 12ths and 16ths.

No. 40. Each, \$4.40. Has a square joint, is full German silver bound, $\frac{5}{8}$ " wide, graduated in 8ths and 16ths only.

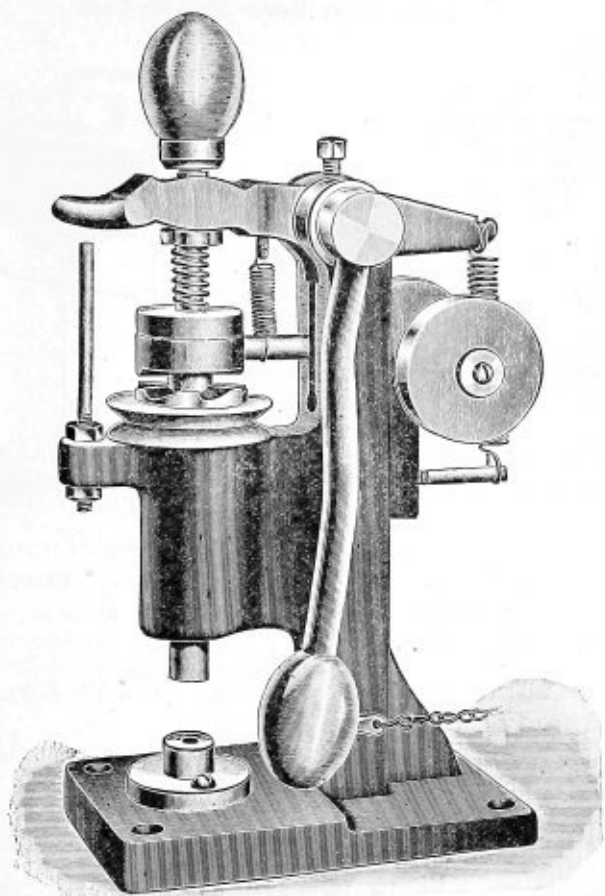
SPECIAL NOTE.

Special attention is called to the fact that we have carefully planned a system for writing orders that is of great value. We urge our customers to USE this new way of writing orders, viz.:

$\frac{1}{4}$ Doz. No. 38—486.

The first number, "38," tells us the item wanted; the following number "486," tells us the page this item is on. We can't err. NOW when you get your Bill it helps you the same way. You don't have to hunt through the index. You know what and where the item is at a glance.

BENCH RIVETING MACHINE.



Designed for small riveting operations where accuracy, rapidity and neatness are the factors.

The pendulum can be operated with the foot, leaving both hands free to hold the work.

Releasing the pendulum, instantly separates the cams, eliminating unnecessary wear and noise.

The force of blow is governed by raising or lowering the tension finger in front which strengthens or weakens the pressure on spring.

This machine is up to the minute in every detail.

Height over all, 13 inches.

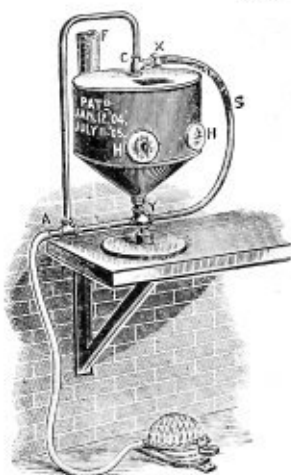
Weight, complete, 18 pounds.

Speed about 500 R. P. M. 3,000 strokes per minute.

Price upon Application.

SAND BLASTING MACHINES

For Foot Power Use.



BENCH MACHINE

No. 1—\$12.00.

The body is made of galvanized sheet iron 10 inches in diameter with glass in top for observation and a vent for escape of dust.



FLOOR MACHINE

No. 2—\$20.00.

The body is made of heavy galvanized sheet iron, 12 inches in diameter, with slanting glass front for observation and a vent for escape of dust.

No. 3—Bellows is extra, if wanted.....\$ 6.00

No. 4—Power Blower, if wanted, extra..... 26.00

DIRECTIONS FOR OPERATING

A small quantity of sand or flint—about three pounds sent with machine—is placed in the hopper and drops to "Y" where it meets the blast from the bellows or blower and is carried through the pipe "S" and again meets the blast at "C," which forcibly projects it upon the work. The sand is thus kept in circulation.

FLINT FOR SAND BLASTING

Nos. $\frac{1}{2}$, 1, $1\frac{1}{2}$, 2, $2\frac{1}{2}$, 3, $3\frac{1}{2}$, 5, 6

All Grades 5c per lb.

Note—Nos. 2, $2\frac{1}{2}$ and 3 are the Best Grades to use.

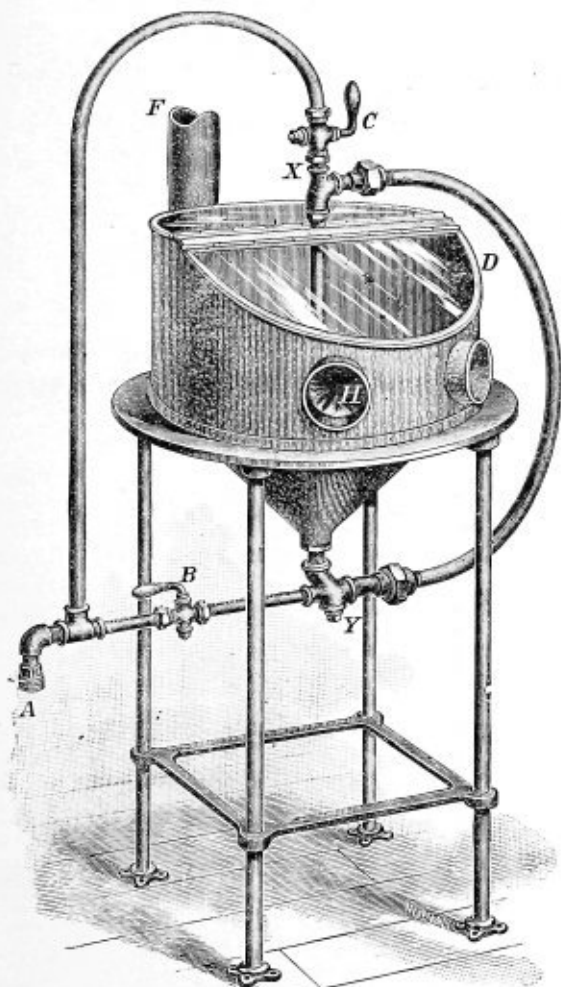
POWDERED PUMICE STONE

Grades FFF, FF, F, O, $0\frac{1}{2}$, $\frac{1}{2}$, 1, $1\frac{1}{2}$, 2

All Grades 5c per lb.

SPECIAL PRICES FOR QUANTITIES

THE NEW COMPOUND SAND BLAST.



Patent Applied For.

No. "A." Price, \$40.00 Net

Supplies a long felt want for securing a continuous flow of sand in ample volume, and the forced delivery of the same upon the work, securing thereby great speed of operation.

A Positive Air Blast connects at A, creating a suction at Y upon the reservoir of sand, conveying the sand to X, where its delivery is accelerated by the blast at C.

B controls circulation of sand. C controls force of blast.

Suitable elastic cuffs inside of hand holes H prevent the escape of sand and dust from the box, and by connecting the vent F at the back to a flue, the gritty dust is carried off by draught; thus the operation is performed with the greatest cleanliness.

The sand box of galvanized sheet iron is 22 in. diameter, with heavy glass tops, hinged.

Weight, net, 105 lbs.

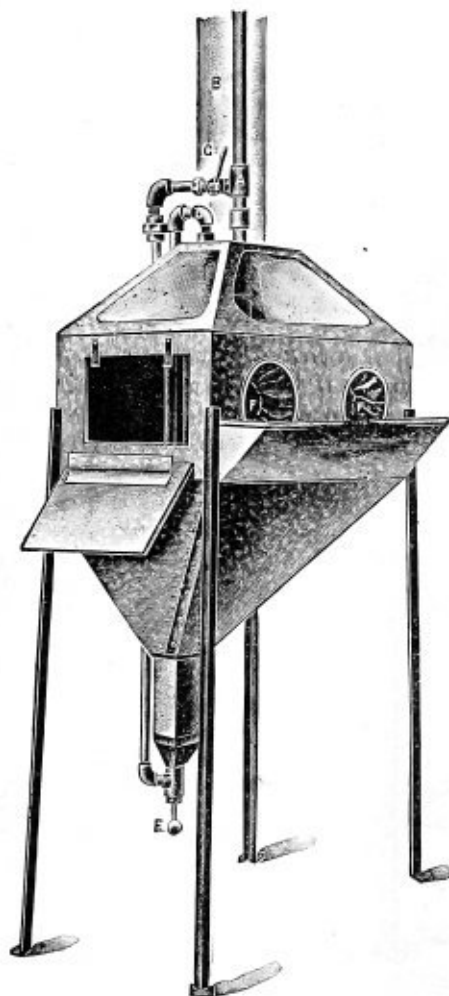
Height to glass top, 51 inches.

Packed, about 155 lbs.

Height to hand holes, 42 inches.

When ordering, use our new system, viz.: 1 only, No. A—489.

LEIMAN SAND BLAST.



SIZES.

Nos.	1	2	2½	3
	\$50.00	\$33.00	\$30.00	\$17.00

Dimensions in Inches.

Nos.	Inside	Door	Floor Space
1	15x16x24	6½x12	18x24
2	9x10x15	4½x 8½	12x15
2½	9x10x15	4½x 8½	12x15
3	7x 8x12	3 x 5	10x12

Nos. 2½ and 3 sizes are without legs.

WEIGHTS.

Nos.	1	2	2½	3
Lbs.,	82	45	45	14

These Sand Blasts are made up in a strictly thorough manner, only the best materials are used. They are well known to the jewelry manufacturers throughout the country and are recognized as being the best Sand Blasts made.

Write your order thus: 1 only, No. 2—490.

SAND PAPERS.

BAEDER, ADAMSON & CO.

FLINT SAND PAPER

in sheets 9x11 inches. Prices per ream:

Number	A	B	C	D	E	G
Grade	No. 000	No. 00	No. 0	No. 1/2	No. 1	No. 1 1/2
Ream	\$6.25	\$6.25	\$6.25	\$6.25	\$6.75	\$7.25
Number	H	J	K	L	M	N
Grade	No. 2	No. 2 1/2	No. 3	No. 3 1/2	No. 4	Ass'd
Ream	\$7.75	\$8.25	\$9.50	\$10.75	\$11.75	\$7.25

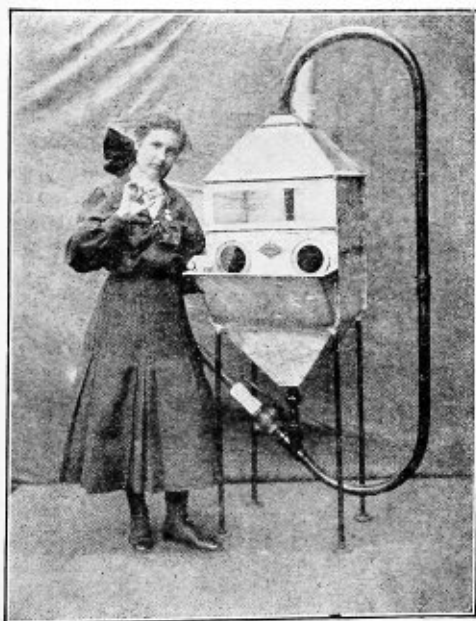
H. H. BARTON & SON CO.

AMERICAN FLINT PAPER

in sheets 9x11 inches. Prices per ream:

Number	R	S	T	U	V	W	X	Y
Grade	No. 00	No. 0	No. 1/2	No. 1	No. 1 1/2	No. 2	No. 2 1/2	No. 3
Ream	\$4.25	\$4.25	\$4.25	\$4.50	\$5.00	\$5.25	\$5.50	\$6.00

SIPPEL PATENT SAND BLAST.



Used by manufacturing jewelers and metal workers for Frosting and Dead Finishing articles of any description.

The work is always in plain sight.

Size "AA" 13"x18"

" "BB" 16"x22"

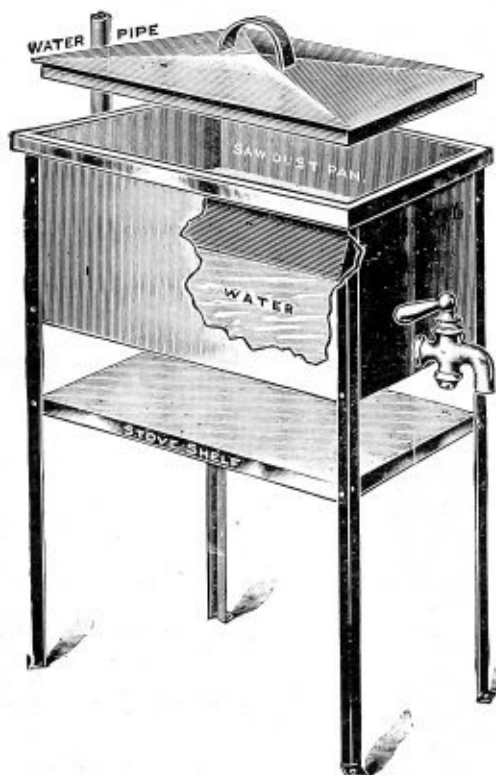
" "CC" 24"x24"

Before placing your order elsewhere for a Sand Blast get our prices and details. It will pay you.

SIPPEL PATENT IMPROVED SAND BLAST.

SAWDUST HEATER.

Complete with brass faucet, rear water pipe connection and shelf for gas stove.



The Sawdust Pan is 12"x19"x4" deep.

Water Tank, 12"x19"x12" deep.

Floor to shelf, 21¼".

Extreme height, 41".

No. 1 Price.....\$23.00

This device is most valuable for factory or store.

A gas stove placed on the lower shelf heats the water admitted to the tank by means of the rear pipe connection, which in turn keeps the sawdust in the inner compartment at the top heated when jewelry and other articles may be washed and dried very quickly and in the most approved manner. By means of the brass faucet the water may be drawn off when renewal is required. Made of heavy copper with galvanized iron shelf and four heavy iron legs.

Gas Stove is extra price, 75c net.

Always connect page number with the item number, viz.:

No. 1—492.

We can fill orders much quicker and you can check your bills in one-tenth of the time of the old way.

BOXWOOD SAWDUST
FOR JEWELERS' USE.

Put up in substantial packages and bags, viz.:

Neat Box containing 1 quart 5c	3½ lbs. in a Bag 25c	10 lbs. in a Bag 50c	65 lbs. in a Bag \$3.00
No. A Fine	No. D Fine	No. H Fine	No. L Fine
" B Medium	" E Medium	" J Medium	" M Medium
" C Coarse	" G Coarse	" K Coarse	" N Coarse

All grades the same price.

Order by respective numbers and avoid error.



For long shipments we pack sawdust in good substantial barrels.

No. P Fine	No. R Medium	No. S Coarse
All grades.....		\$3.50 per bbl.



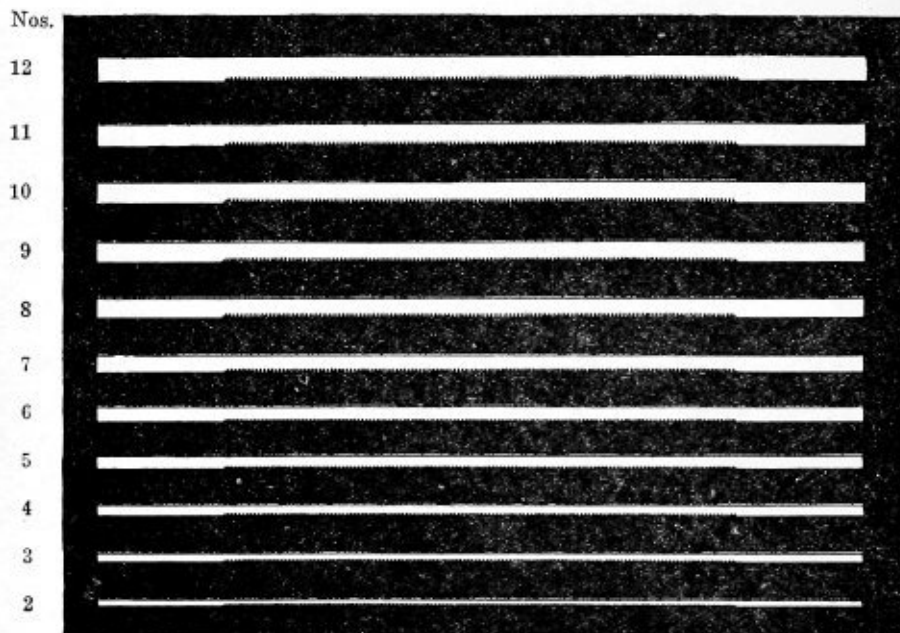
SAWDUST SHAKER
—or—
JEWELER'S DRYING BOX.

Made of sheet brass and of good size.

No. T	\$4.50 dozen
-------------	--------------

LAFAYETTE FLAT SAW BLADES—BEST QUALITY.

THE BEST THAT CAN BE MADE.



All widths of these saws are five (5) inches long. All blades are exceedingly thin and have fine teeth cut on one edge.

	Gross.	Doz.
All numbers, 1 to 7, inclusive.....	\$0.80	\$0.10
" " 8 to 12, "	1.00	.12

PEARL SAW BLADES.

These are made the same widths as flat saws, also of the same thicknesses, but they have much finer teeth.

When ordering affix the letter "P" to respective numbers.

	Gross.	Doz.
All numbers 1P to 7P inclusive.....	\$1.00	\$0.12
" " 8P to 12P "	1.25	.15

BRACKET OR WOOD SAW BLADES.



Nos. 1	2	3	4	5	6	7	8	9	10		5" Nos. 4/0 to 4, \$0.50 gross, \$0.05 doz.
											5" " 5 " 10, .60 " .06 doz.
											6 1/2" " 1 " 10, 1.00 " .10 doz.
											8" " 1 " 4, 1.25 " .12 doz.
											8" " 5 " 10, 1.40 " .15 doz.

LAFAYETTE SAW BLADES.

For Jewelers and Silversmiths.

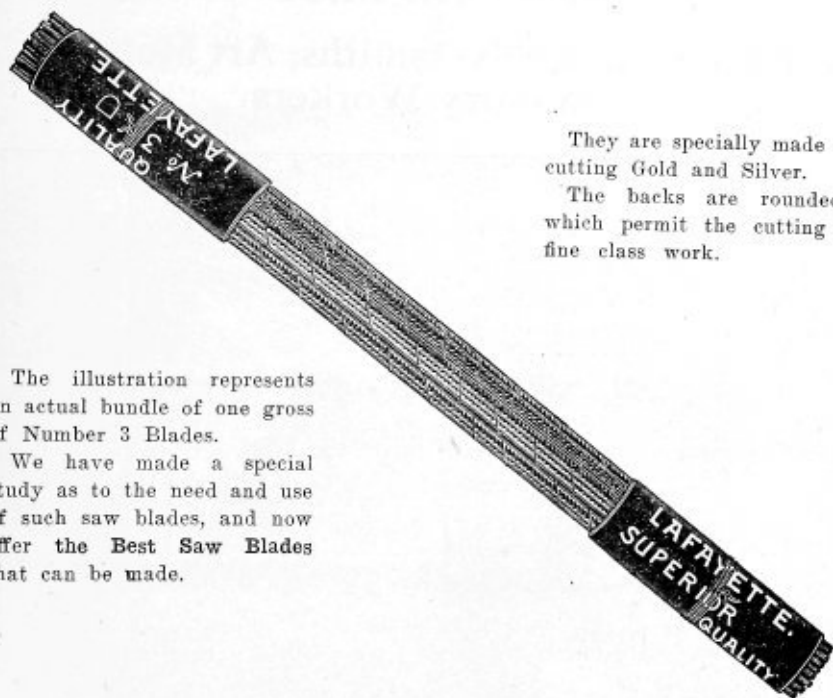
Superior in Quality, Uniformity and Temper.

They are specially made for cutting Gold and Silver.

The backs are rounded—which permit the cutting of fine class work.

The illustration represents an actual bundle of one gross of Number 3 Blades.

We have made a special study as to the need and use of such saw blades, and now offer the **Best Saw Blades** that can be made.



REMEMBER LAFAYETTE IS A GUARANTEE OF QUALITY.

Sizes.	Sizes.
No. 6/0	No. 1
" 5/0	" 2
" 4/0	" 3
" 3/0	" 4
" 2/0	" 5
" 1/0	" 6

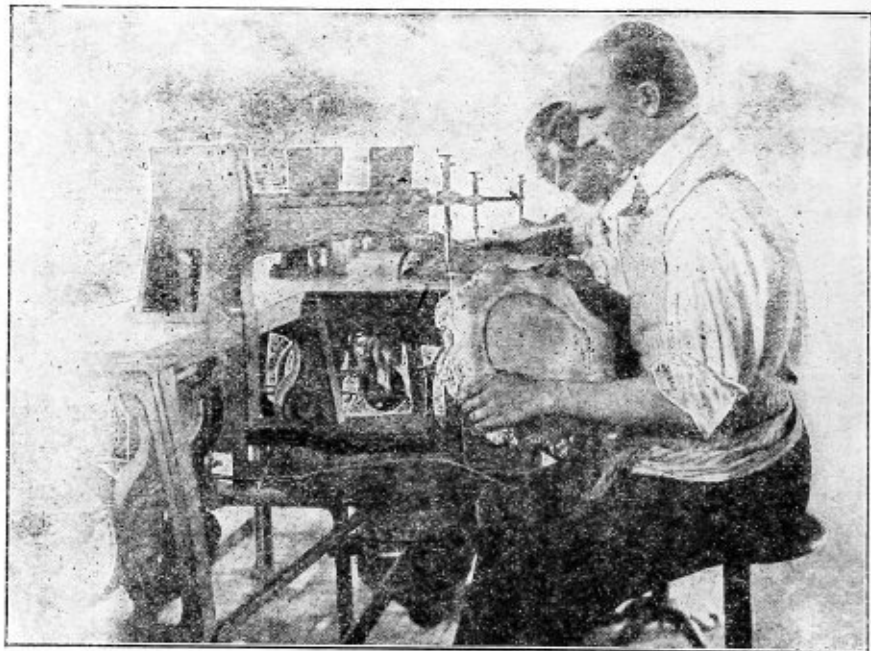
All Sizes, \$0.75 Per Gross.

Write your order—viz., 3 Gr. No. 3/0—495.

Lafayette Saw Blades

"ARE THE BEST"

**for Jewelers, Silversmiths, Art Metal
and Ivory Workers**



This illustration shows how the sawing of irregular shaped articles is accomplished.

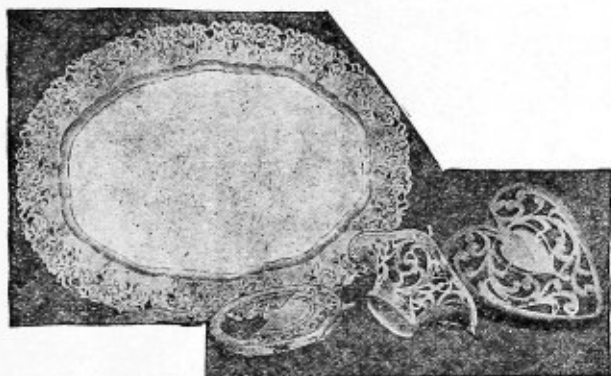
LAFAYETTE SAW BLADES are imported goods. They are made expressly for us. Long years of experience in the manufacturing of fine saw blades for metal sawing has placed our factory just a little ahead of all others. Therefore, we offer our customers blades not only made of the best materials, but properly cut and tempered—both most essential features.

Use Lafayette Blades. They will outwear and do more work than any other blade made.

Lafayette Saw Blades

for Jewelers, Silversmiths and Art Metal Workers

CAN BE RELIED UPON



The above illustrations will give you a good idea of the great variety of work that can be done most economically with LAFAYETTE SAW BLADES.

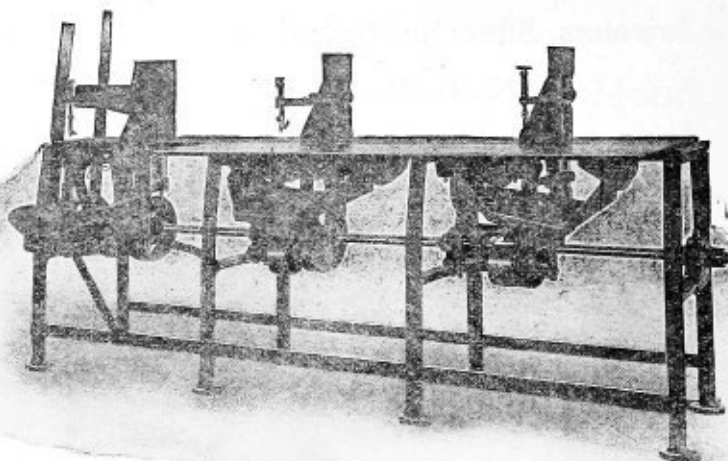
If you have never used Lafayette Saws, try them and be convinced of their value.

For monogram work Lafayette Saw Blades are unexcelled.

They are money earners—use them.

POWER JIG SAWS.

Code Word "Sonsacar."



A SAW THAT MEANS BUSINESS.

For Silversmiths, Jewelers, and Art Metal Workers, a machine designed for the purpose of saving time and labor. One machine will do the work of half a dozen men, working by hand power.

The saw is substantially constructed. The entire machine is of steel and iron, including table and frame work. Shaft and driving pulley go with the saw.

These saws are built singly, or any desired number combined, making one continuous table. Arranged for either hollow or flat work, separately or combined, as shown. Driving shaft extends entire length under table. When combined, each separate saw is under complete control of its operator by means of instantaneous clutch. Life of saw blades prolonged by means of a special feature in saw clamp.

It will saw through metal in layers, or one solid piece $\frac{3}{4}$ in. thick. For marquetry, mosaie, inlay or relief, it will saw accurately.

A boy can operate this saw and do good work with two days' instruction.

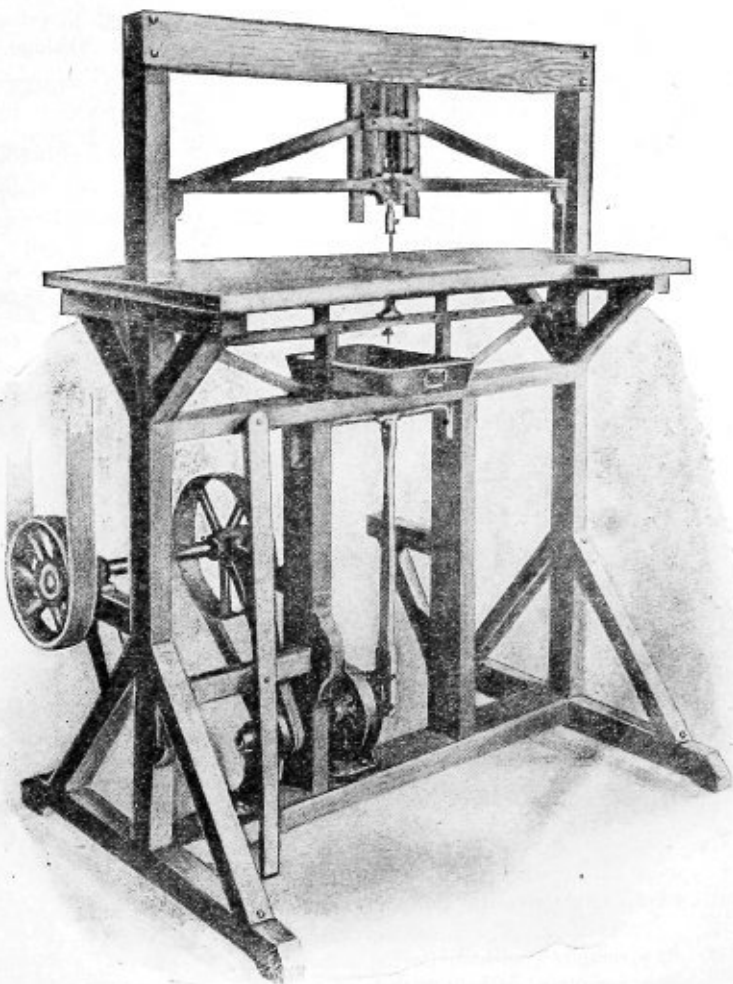
Prices upon request.

POWER JIG SAW "OR" SAW-PIERCING MACHINE.

Strictly a First-Class Tool.

Holds All Sizes of "Lafayette" Saws,
Nos. 1 to 12, Inclusive.

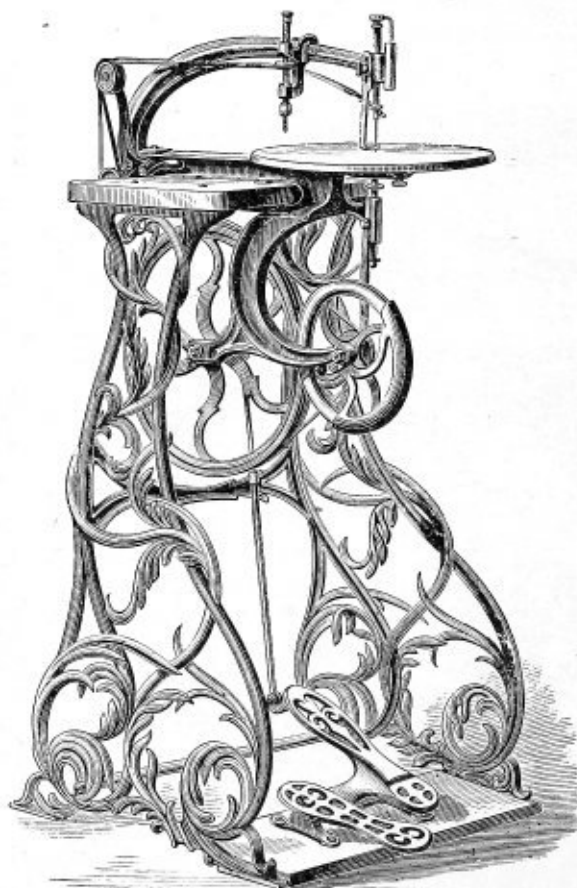
The Pan shown is placed on the machine so as to catch all of the filings that come from the work sawed.



Price, \$125.00

FLEETWOOD JIG SAWING MACHINE.

This is a Good Tool Where Work Does Not Require Accuracy.
For Light Work Only.



T. E. COOK, N.Y.

Swings 15 $\frac{1}{4}$ in. Belt
Gear. Tilting Table
Either Foot or Power.
Light Running. A Per-
fect Machine.

A FLEETWOOD
FANCY FRAME.

PRICES.

No. 3-A. Complete, with
Blower, Boring Attach-
ment and Treadle,
mounted on fancy
stand. Each\$22.50

No. 3-B. Complete, as
above, mounted on plain
stand. Each\$21.00

No. 3-C. Saw only, with
Treadle and Blower.
Each\$13.50

No. 3-D. Saw only, with
Blower and T. & L. Pul-
ley for power...\$ 13.50

We can supply a simi-
lar machine—

“DEXTER” C

—much lighter, and for
Foot Power only. Swing
16" and has Tilting
Table.

PRICES.

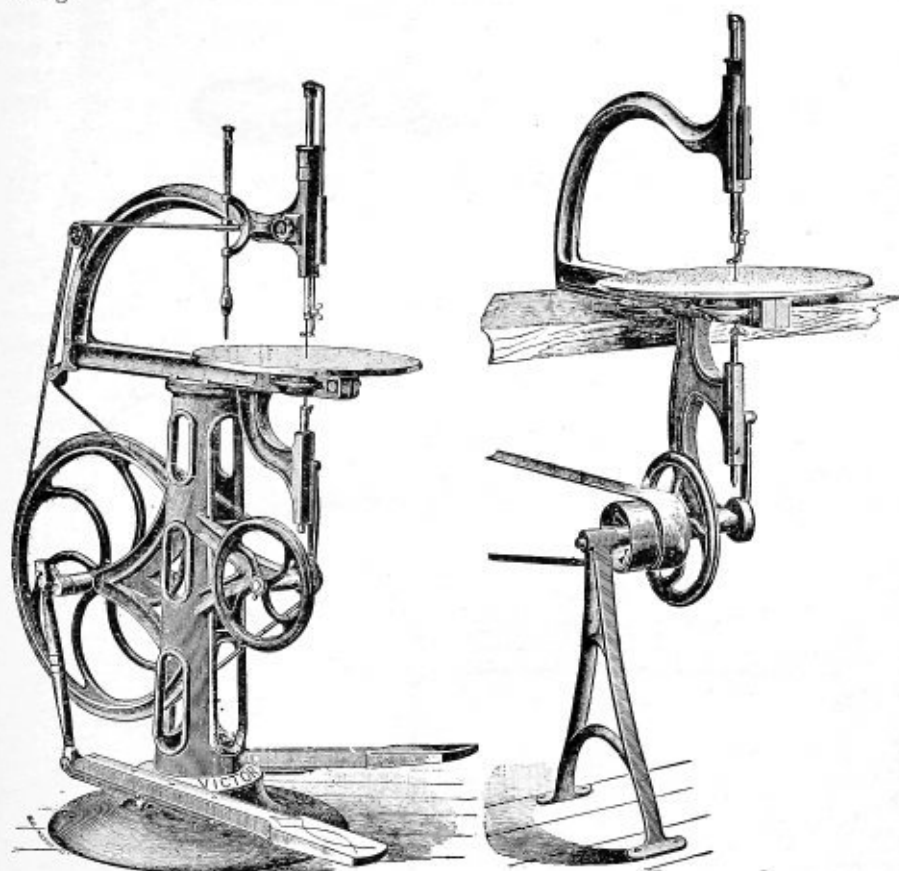
No. G. Saw complete, with Boring Attachment and Blower mounted on stand	\$13.00
No. H. Saw complete, without Boring Attachment.....	11.50
No. J. Saw complete, without Stand.....	10.00

Write your order—viz., 1 only No. 3-B—500.

THE "VICTOR" SCROLL SAWS.

While designed to use 8-inch saw blades, can be adjusted to use 5-inch blades if desired, for very light work.

Will cut with the greatest precision up to 3 inches thick and have 24 inch swing.



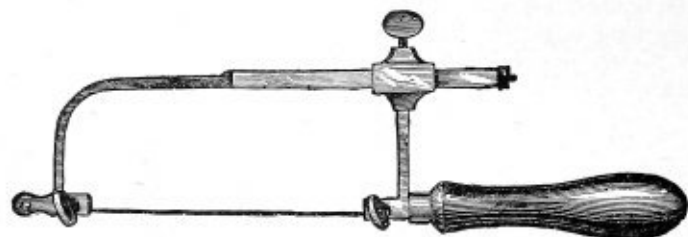
No. 1 Machine.

No. 5 Machine.

- | | | |
|--------|----------|---|
| No. 1. | \$40.00. | Has foot power and drill attachment. |
| No. 2. | 35.00. | Same as No 1, without drill attachment. |
| No. 3. | 40.00. | Has tight and loose pulleys and drill attachment. |
| No. 4. | 25.00. | Same as No. 3, without drill attachment. |
| No. 5. | 25.00 | (To attach to bench), with tight and loose pulleys. |

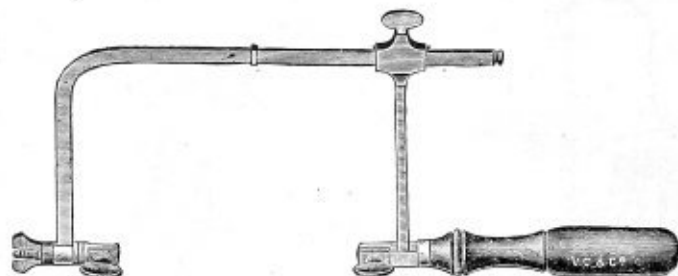
Tight and Loose Pulleys for steam power for Nos. 1 or 2 "Victor" Scroll Saws.

JEWELERS' SAW FRAMES.



No.	Deep.	Doz.
2	2"	\$5.00
3	3"	8.00
4	4"	8.50
5	5"	9.50
6	6"	10.50

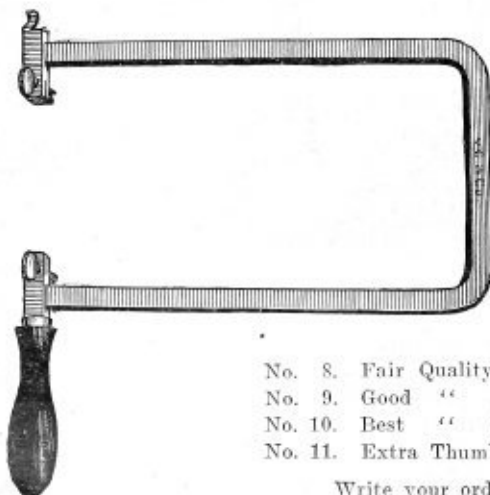
All above frames are 6 inches long.



This frame is
6 inches long
and 4 inches
deep.

No. 7.
\$13.00 Dozen

This frame has Thumb Screw adjustment for blade.

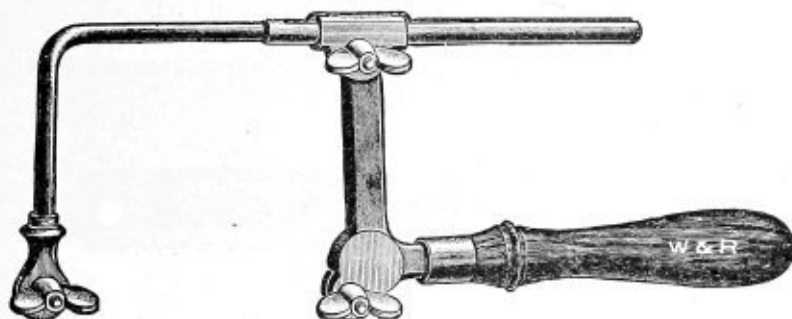


Bracket
Saw
Frame
12 inches
Deep.

No. 8.	Fair Quality.....	\$5.00	Dozen
No. 9.	Good ".....	6.00	"
No. 10.	Best ".....	8.00	"
No. 11.	Extra Thumb Screws...	.75	" 10c each

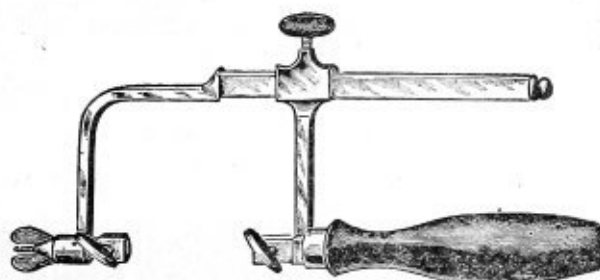
Write your orders—viz., 2 only No. 4—502.

SAW FRAMES.



This Frame is $2\frac{1}{2}$ " Deep and Fitted with Rosewood Handle.

No. "A" Price Each, \$1.00



This Frame is 3" Deep and Fitted with Plain Black Handle.
It has an End Screw for Extra Adjustment.

No. B.	Plain Bright Finish	...	\$0.60	each
" C.	Nickeled	"	.... .85	"

SPECIAL NOTE—

By using our new system in writing orders you make it possible for us to fill **YOUR ORDER** much quicker than it would be possible to locate the goods wanted by the old way.

First. You tell us the items wanted.

Second. The page number on which the articles are listed.

STARRETT "HARD" HACK SAWS.

For Hand Saw Frames.

The 6, 7, 8 and 9 inch saws are 7/16 inch wide, .022 inch thick; the 10, 11 and 12 inch are 1/2 inch wide, .022 inch thick.



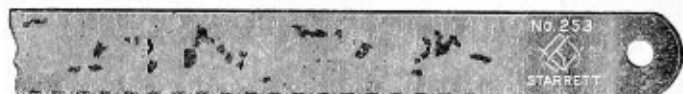
Number.....	A	B	C	D	E	G	H
Length.....	6 in.	7 in.	8 in.	9 in.	10 in.	11 in.	12 in.
Per Dozen ..	\$0.55	\$0.60	\$0.65	\$0.70	\$0.85	\$0.95	\$1.05
Per Gross ...	6.60	7.20	7.80	8.40	10.20	11.40	12.60

No. 103 has 14 Teeth to the inch, for general use.

No. 102 has 24 Teeth to the inch, used for cutting tubing and heavy sheet metals.

No. 253 has 32 Teeth to the inch, used for cutting thin tubing and thin sheet metals.

All same price. See list above.



STARRETT'S FLEXIBLE BACK HACK SAWS.

These saws are made of the finest grade of steel especially adapted to the purpose, hardened and tempered on the cutting edge only, with flexible back.

No. 250 has 14 Teeth to the inch.

No. 252 has 24 Teeth to the inch.

No. 258 has 32 Teeth to the inch.

All same price. See list above.

Note.—Order Saw Blades thus:

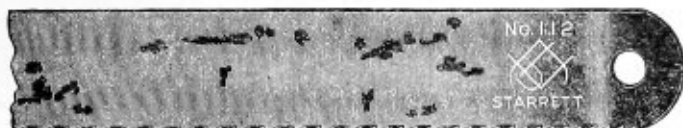
3 Doz. No. 103-C—504,

or 1/2 Gr. No. 252-E—504.

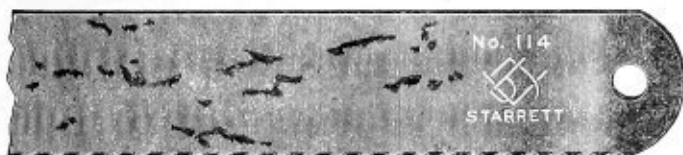
Then we cannot err.

STARRETT HARD HACK SAWS.

FOR POWER MACHINES.

No. 112. $\frac{5}{8}$ " wide, .030" thick, 14 Teeth to the inch.

Number.....	J	K	L	M
Length.....	8 in.	9 in.	10 in.	12 in.
Per dozen	\$0.65	\$0.70	\$0.85	\$1.05
Per gross	7.80	8.40	10.20	12.60

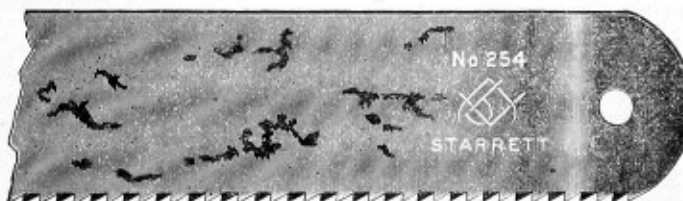
No. 114. $\frac{3}{4}$ " wide, .035" thick, 14 Teeth to the inch.

Number.....	N	P	R	S	T
Length.....	12 in.	13 $\frac{1}{2}$ in.	14 in.	16 in.	16 $\frac{1}{2}$ in.
Per dozen	\$1.50	\$1.67	\$1.67	\$2.17	\$2.17
Per gross	18.00	20.00	20.00	26.00	26.00

No. 255. $\frac{3}{4}$ " wide, .049" thick, 14 Teeth to the inch.

Number.....	U	V	W
Length.....	13 $\frac{1}{2}$ in.	14 in.	17 in.
Per dozen ..	\$2.00	\$2.00	\$2.25
Per gross ..	24.00	24.00	27.00

No. 254. 1" wide, .049" thick, 12 Teeth to the inch.



No. Z. Length, 17 in. Per dozen, \$2.35. Per gross, \$28.20

No. 256. 1" wide, .065" thick, 12 Teeth to the inch.

The 17 inch measures 16 $\frac{1}{2}$ inches from center to center of hole; approximately 17 inches over all. The 18 inch measures 17 $\frac{3}{8}$ inches from center to center of hole, approximately 18 $\frac{5}{8}$ inches over all.

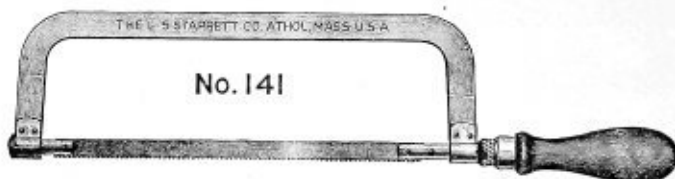
Number.....	X	Y
Length.....	17 in.	18 in.
Per dozen	\$2.65	\$2.85
Per gross	31.80	34.20

Write your orders—viz., 3 Doz. 114-N—505.

STARRETT PATENT HACK SAW FRAMES.

Nickel-plated. Beautifully Finished.

The Frames are exceptionally stiff, as the stock in same is wider than commonly used, and it cannot be cramped by straining the blade. The saws may be set to cut in either of four directions and tightened by simply turning the handle.



This Frame not Adjustable. Holds one size Blade only.
One Saw Blade with each Frame.

Number.....	A	B	C	D	E
To hold Blade 8 in.		9 in.	10 in.	11 in.	12 in.
Each	\$0.70	\$0.75	\$0.80	\$0.85	\$0.90



An adjustable Frame holding 8", 9", 10", 11" and 12" Blades. Saws may be set to cut in either one of four directions, and tightened by simply turning the handle. Polished and nickel-plated.

No. 146. Price, with one blade, \$1.00



Spring plungers overlap the ends of the saw, automatically holding it to its home. By slightly pushing them back the saw may be instantly removed, thus furnishing the most convenient way of attaching or detaching the saw ever devised.

No. 145. Price, with one blade, \$1.25

Affix page number to item number.

CIRCULAR METAL CUTTING SAWS.

THE BEST MADE.

All Prices are per Dozen Saws.

Use care in ordering Saws. Give Diameter, Thickness, Hole and Kind of Material same is to cut.

Diam. of Screw Head to be Slotted.	Gauge of Saw by Brown & Sharpe's Standard Wire Gauge.	Thickness of Saw in Decimals.	$\frac{3}{8}$ in.	1 in.	$1\frac{1}{4}$ in.	$1\frac{1}{2}$ in.	$1\frac{3}{4}$ in.	2 in.	$2\frac{1}{4}$ in.	$2\frac{1}{2}$ in.	$2\frac{3}{4}$ in.	3 in.	$3\frac{1}{4}$ in.	$3\frac{1}{2}$ in.	$3\frac{3}{4}$ in.	4 in.	$4\frac{1}{4}$ in.	$4\frac{1}{2}$ in.	$4\frac{3}{4}$ in.	5 in.
Dia.	No.		Dia.	Dia.	Dia.	Dia.	Dia.	Dia.	Dia.	Dia.	Dia.	Dia.	Dia.	Dia.	Dia.	Dia.	Dia.	Dia.	Dia.	Dia.
$\frac{3}{8}$ In.	No. 8	.128	3.80	3.90	4.00	4.20	4.40	4.60	4.90	5.20	5.50	6.00	6.50	7.00	7.80	8.60	9.40	10.60	11.80	13.00
$\frac{3}{4}$ In.	" 9	.114	3.30	3.40	3.50	3.70	3.90	4.10	4.40	4.70	5.00	5.50	6.00	6.50	7.30	8.10	8.90	10.10	11.30	12.50
$\frac{5}{8}$ In.	" 10	.102	2.80	2.90	3.00	3.20	3.40	3.60	3.90	4.20	4.50	5.00	5.50	6.00	6.80	7.60	8.40	9.60	10.80	12.00
	" 11	.091	2.50	2.60	2.70	2.90	3.10	3.30	3.60	3.90	4.20	4.70	5.20	5.70	6.50	7.30	8.10	9.30	10.50	11.70
$\frac{1}{2}$ In.	" 12	.081	2.20	2.30	2.40	2.60	2.80	3.00	3.30	3.60	3.90	4.40	4.90	5.40	6.20	7.00	7.80	9.00	10.20	11.40
	" 13	.072	1.90	2.00	2.10	2.30	2.50	2.70	3.00	3.30	3.60	4.10	4.60	5.10	5.90	6.70	7.50	8.70	9.90	11.10
$\frac{3}{8}$ In.	" 14	.064	1.70	1.80	1.90	2.10	2.30	2.50	2.80	3.10	3.40	3.90	4.40	4.90	5.70	6.50	7.30	8.50	9.70	10.90
$\frac{1}{2}$ In.	" 15	.057	1.50	1.60	1.70	1.90	2.10	2.30	2.60	2.90	3.20	3.70	4.20	4.70	5.50	6.30	7.10	8.30	9.50	10.70
$\frac{5}{16}$ In.	" 16	.051	1.30	1.40	1.50	1.70	1.90	2.10	2.40	2.70	3.00	3.50	4.00	4.50	5.30	6.10	6.90	8.10	9.30	10.50
$\frac{3}{4}$ In.	" 17	.045	1.20	1.30	1.40	1.60	1.80	2.00	2.30	2.60	2.90	3.40	3.90	4.40	5.20	6.00	6.80	8.00	9.20	10.40
$\frac{1}{2}$ In.	" 18	.040	1.10	1.20	1.30	1.50	1.70	1.90	2.20	2.50	2.80	3.30	3.80	4.30	5.10	5.90	6.70	7.90	9.10	10.30
$\frac{7}{32}$ In.	" 19	.035	1.00	1.10	1.20	1.40	1.60	1.80	2.10	2.40	2.70	3.20	3.70	4.20	5.00	5.80	6.60	7.80	9.00	10.20
$\frac{3}{16}$ In.	" 20	.032	1.00	1.10	1.20	1.40	1.60	1.80	2.10	2.40	2.70	3.20	3.70	4.20	5.00	5.80	6.60	7.80	9.00	10.20
$\frac{1}{8}$ In.	" 21	.028	1.00	1.10	1.20	1.40	1.60	1.80	2.10	2.40	2.70	3.20	3.70	4.20	5.00	5.80	6.60	7.80	9.00	10.20
	" 22	.025	1.00	1.10	1.20	1.40	1.60	1.80	2.10	2.40	2.70	3.20	3.70	4.20	5.00	5.80	6.60	7.80	9.00	10.20
	" 23	.023	1.00	1.10	1.20	1.40	1.60	1.80	2.10	2.40	2.70	3.20	3.70	4.20	5.00	5.80	6.60	7.80	9.00	10.20
	" 24	.020	1.00	1.10	1.20	1.40	1.60	1.80	2.10	2.40	2.70	3.20	3.70	4.20	5.00	5.80	6.60	7.80	9.00	10.20
	" 25	.018	1.00	1.10	1.20	1.40	1.60	1.80	2.10	2.40	2.70	3.20	3.70	4.20	5.00	5.80	6.60	7.80	9.00	10.20
	" 26	.016	1.00	1.10	1.20	1.40	1.60	1.80	2.10	2.40	2.70	3.20	3.70	4.20	5.00	5.80	6.60	7.80	9.00	10.20
	" 27	.014	1.00	1.10	1.20	1.40	1.60	1.80	2.10	2.40	2.70	3.20	3.70	4.20	5.00	5.80	6.60	7.80	9.00	10.20
	" 28	.012	1.00	1.10	1.20	1.40	1.60	1.80	2.10	2.40	2.70	3.20	3.70	4.20	5.00	5.80	6.60	7.80	9.00	10.20
	" 29	.011	1.00	1.10	1.20	1.40	1.60	1.80	2.10	2.40	2.70	3.20	3.70	4.20	5.00	5.80	6.60	7.80	9.00	10.20
	" 30	.010	1.00	1.10	1.20	1.40	1.60	1.80	2.10	2.40	2.70	3.20	3.70	4.20	5.00	5.80	6.60	7.80	9.00	10.20
	" 31	.008	1.00	1.10	1.20	1.40	1.60	1.80	2.10	2.40	2.70	3.20	3.70	4.20	5.00	5.80	6.60	7.80	9.00	10.20
	" 32	.007X	1.00	1.10	1.20	1.40	1.60	1.80	2.10	2.40	2.70	3.20	3.70	4.20	5.00	5.80	6.60	7.80	9.00	10.20
	" 33	.007—	1.00	1.10	1.20	1.40	1.60	1.80	2.10	2.40	2.70	3.20	3.70	4.20	5.00	5.80	6.60	7.80	9.00	10.20
	" 34	.006	1.00	1.10	1.20	1.40	1.60	1.80	2.10	2.40	2.70	3.20	3.70	4.20	5.00	5.80	6.60	7.80	9.00	10.20
	" 35	.005X	1.00	1.10	1.20	1.40	1.60	1.80	2.10	2.40	2.70	3.20	3.70	4.20	5.00	5.80	6.60	7.80	9.00	10.20
	" 36	.005—	1.00	1.10	1.20	1.40	1.60	1.80	2.10	2.40	2.70	3.20	3.70	4.20	5.00	5.80	6.60	7.80	9.00	10.20

STAR POWER HACK SAWING MACHINE.



No. 1. \$25.00

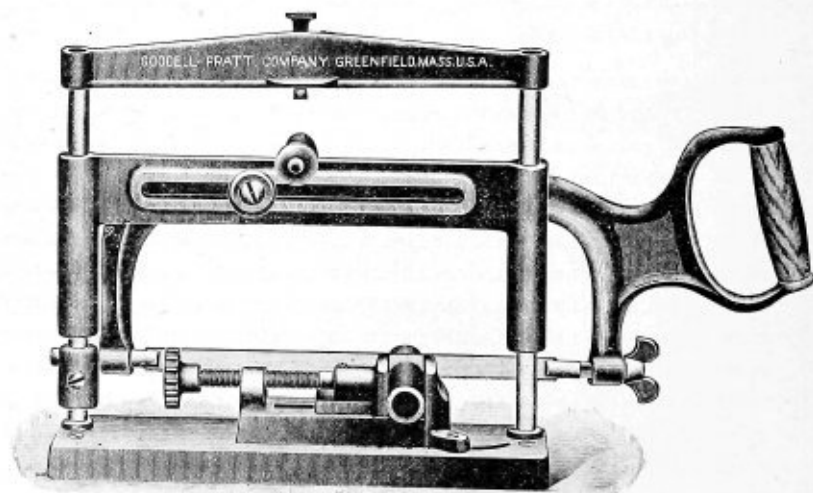
Probably there is no more popular or satisfactory machine of any description made than the Star Power Saw, as per illustration. It adapts itself to all kinds of work and cuts all shapes and sizes up to 4½ inches in diameter. It is self-feeding, requiring no attention while making a cut, and stops automatically when the work is completed. Blades used in the Star Power Saw get fair treatment and the saving made in them in this way will soon pay for a machine when there is much work to be done. It is arranged for blades either 10, 11 or 12 inches in length.

Six 12-inch Blades are furnished with each Machine.

The speed recommended is 45 strokes per minute.

Size of Pulley 13½ x 2½ inches. Net weight 168 pounds.

BENCH HAND MACHINE.

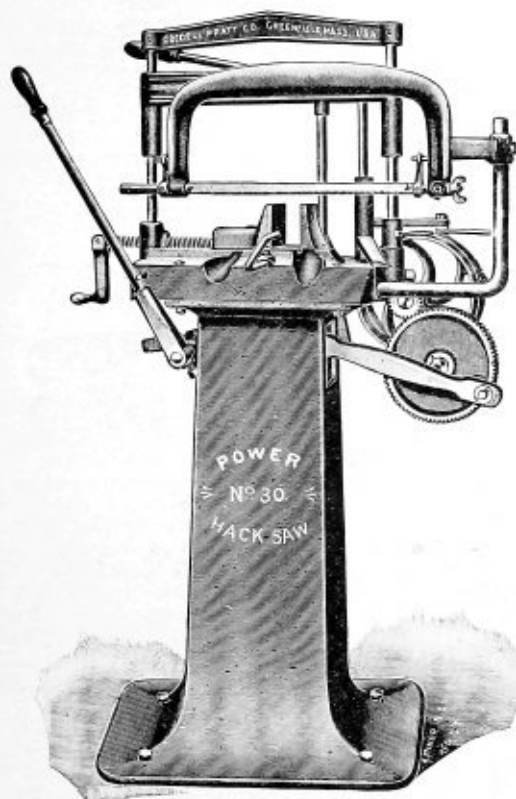


It is fitted with a swivel vise, which opens 2" and can be set to saw at an angle.

One 9-inch Saw Blade is furnished with each machine, which should be strained well in the frame when in use. It is so constructed that 8-inch Blades can be used when desired.

POWER HACK SAW No. 30.

Power Hack Saws have become so well known to all classes of metal workers that we do not feel called upon to make allusion to their general usefulness. No up-to-date shop can afford to be without one; often where one is in use, two would be found equally profitable.



No. 30. Price, \$30.00

Tight and Loose Pulley, 6 inches in diameter. Geared 3 to 1.
Machine should run 45 to 50 strokes per minute to get best results.
Pulley should run 150 revolutions per minute.

Order—viz., 1 only No. 30—509.

The machine is provided with an Adjustable Automatic Stop, which can be set to stop the Saw at any desired depth, or after the work has been cut completely off, and is instantaneous in its action.

Particular attention is called to the fact that the saw blade always runs parallel to the bottom of the Vise. This feature will prove very valuable when the operator desires to saw a slot of any desired depth.

The Vise will take in work $4\frac{1}{2} \times 4\frac{1}{2}$ inches, and is operated by a handled screw, as shown in the cut. The bed of the Vise extends beyond the jaws, another feature which will at once commend itself.

The machine is thoroughly well made and practical in all its workings.

GERMAN POCKET SCALES.



In leather-covered boxes, German make, brass beam with weights.

No.	Beam.	Pan.	Price.
726	6 in.	2 1/4 in.	each, \$0.75
725	5 "	2 "	" .60

Mailed to any address on receipt of price.

HORN PAN SCALES.

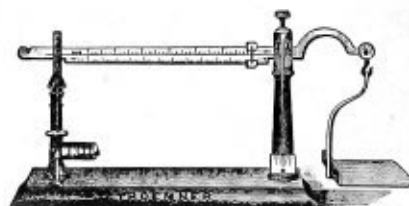


Fine Berlin make; polished brass beam. Horn pans.

No.	Beam.	Pans.	Price.
785	5 in.	2 in.	each, \$1.50
786	6 "	2 "	" 1.75

Saddle scales, rider to weigh 5 gr. 3.50

Saddle Scales, rider to weigh 10 gr. 4.50



No. 320. \$30.00

Scale will weigh from the smallest sample up to one pound.

Price of Mahogany Case with Sliding Door...\$12.00

OAK BOX POCKET SCALES.



English make, in oak box; steel beam, with the weights; this is a strictly reliable scale in all respects.

No.	Beam.	Pans.	Price.
776	6 in.	2 1/4 in.	each, \$1.75
Per dozen, net.....			

Mailed to any address on receipt of price and postage.

POCKET SCALES.



Strictly first class; they are put up in neat tin boxes, with oval ends, and enameled green with bronze stripes; entire scale is of brass, including deep brass pans, hung with brass chains; full set of accurate weights are included.

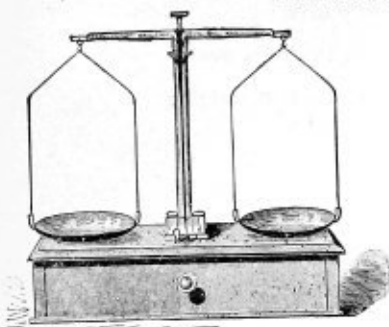
No.	Capacity.	Price.
350	1 oz.	\$2.00
355	2 "	2.50
360	4 "	3.00

ESTIMATING SCALE No. 320.

For estimating cost of quantity by weighing a single piece. With this Estimator the correct weight of the quantity will be shown at a glance. No time lost in figuring and no errors can occur.

To operate, place the article on the scale pan, slide the poise along beam until scale balances, which will indicate the results in pounds, ounces and fractions of ounces, how much material will be needed per 1,000, 100, gross or dozen.

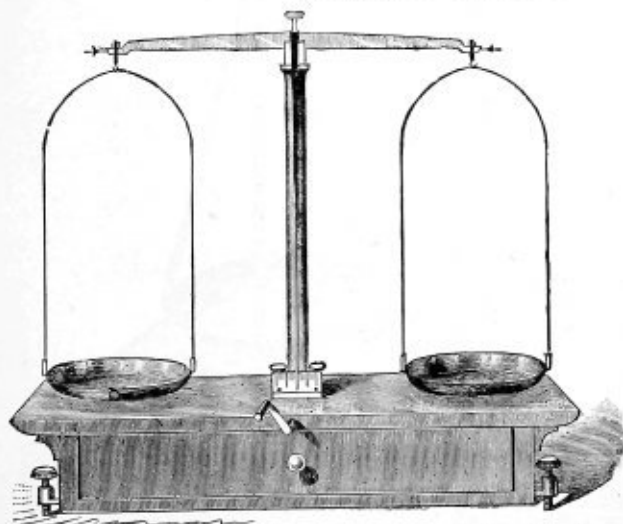
JEWELERS' GOLD SCALES.



Indicator pointing downward; on a polished walnut box, with drawer; accurately adjusted; a set of Troy cup weights, including pennyweights and grain weights, furnished with each scale.

No.	Beam.	Diam. of Pans.	Weights to Weigh	Price.
1390	13 in.	6 in.	64 oz.	\$24.00
1391	10 "	5 "	32 "	15.00
1392	9 "	4 "	16 "	12.00
1393	7 "	3½ "	8 "	10.00
1394	6½ "	3 "	4 "	8.00

JEWELERS' BALANCE.



Note—All of these scales are made with agate bearings. Agate is nearly as hard as diamond and will not corrode.

Never put oil on any of the working parts of Scales; if they do not work right oil will not help them—it will collect dust and gum and make the Scale worse; if you think it needs oil, we know it needs repairing.

No. 1350. \$45.00. Elegant balance of the finest finish; on French polished mahogany box, with drawer; screw feet and level; capacity 100 oz. in each pan; sensibility ¼ grain; pans are 7 in., nickel-plated.

No. 1350 C. \$70.00. Same balance in fine mahogany case, counterpoised sliding door.

No. 1351. \$24.00. Balance on mahogany box; has movable 6 in. pans; sensible to 1/10 grain; capacity 30 oz. in each pan.

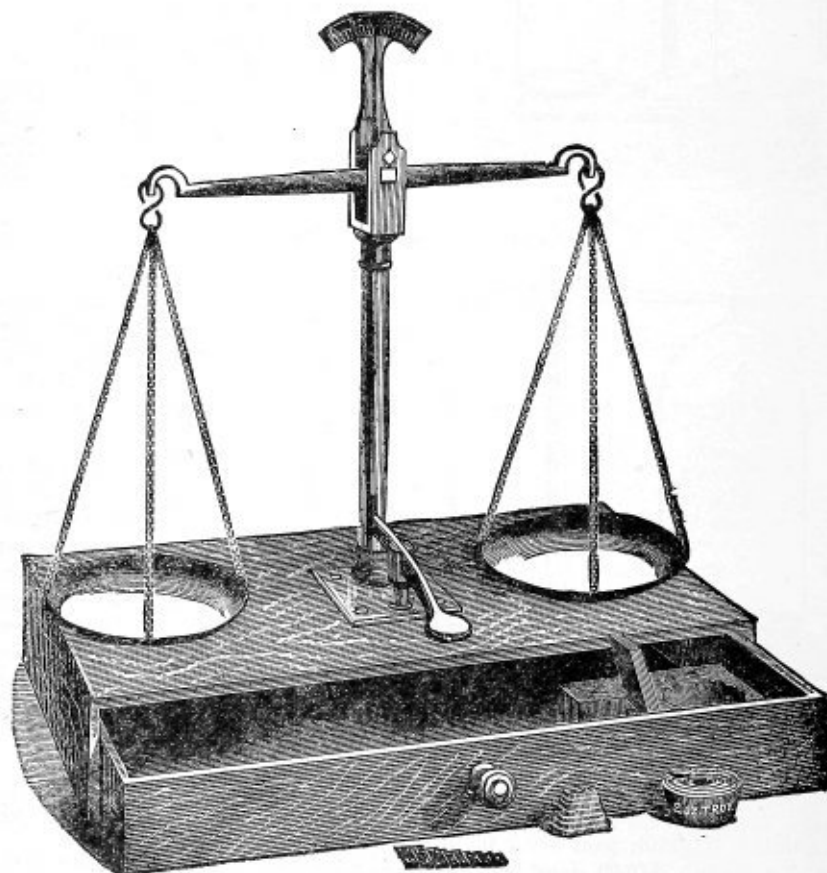
No. 1352. \$18.00. Has 4 in. nickel pans; capacity 10 oz. in each pan; sensible to 1/20 grain.

No. 1353. \$15.00. Has 3 in. nickel pans; capacity 5 oz. in each pan; sensible to 1/20 grain.

Only the No. 1350 is provided with leveling feet and level as cut above.

IMPORTED GOLD SCALES.

The illustration below represents a Platform Scale.
Each size is supplied with a complete set of weights.



Number:	A	B	C	D	E	G
Capacity:	2 oz.	4 oz.	6 oz.	8 oz.	16 oz.	32 oz.
Each	\$3.50	\$4.00	\$5.00	\$5.75	\$7.75	\$10.00

Note—Write your orders viz.: 1 only “D”—512.

“D” tells us the item wanted and 512 designates the page that the item is on. Use our New System—IT’S THE BEST.

IMPORTED GOLD SCALES.

The adjoining illustration represents a

POCKET GOLD SCALE.

This scale is put up in a neat mahogany box, outside dimensions are 9" long x 4" wide x 1 $\frac{3}{4}$ " high.

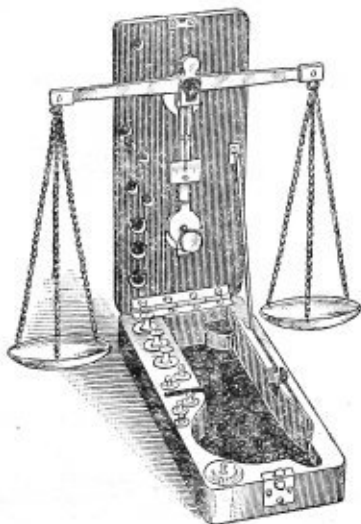
The Beam is 8" long.

The Pans are 3" diameter.

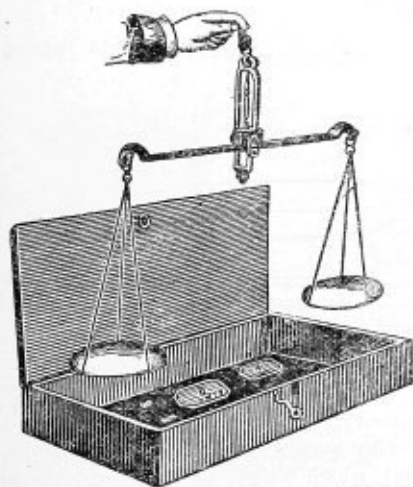
Capacity 5 oz. Troy weight.

No. "A"\$12.00

Complete set of weights is included.



HAND SCALE IN NEAT WOOD BOX.



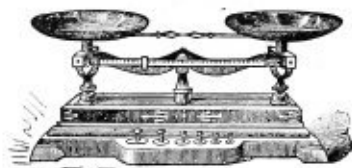
Each scale is furnished with a complete set of weights for each respective capacity.

Number.	Capacity.	Each.
B	1 oz.	\$1.00
C	2 "	1.20
D	3 "	1.30
E	4 "	1.40
G	6 "	1.80
H	8 "	2.50

Write your orders, viz.:
1 only G-513.

This avoids error and makes quick service possible.

JEWELERS' COUNTER SCALE. (New.) No. 139.

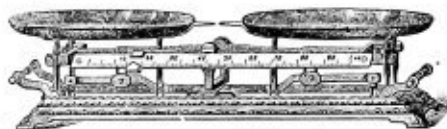


A new form of counter scale, suitable for weighing silverware, watch cases, jewelry, etc.; has 6 in. nickel pans; all bearings are of "Agate," to insure the highest attainable sensibility with endurance. Has a side beam on front divided into pennyweights and grains, by which the exact weight of an article is very quickly ascertained and does

away with small weights; a set of weights (12 ounces) is arranged on a platform on front of scale. This scale is sensible to $\frac{1}{2}$ grain.

Price, complete No. 139, \$18.00

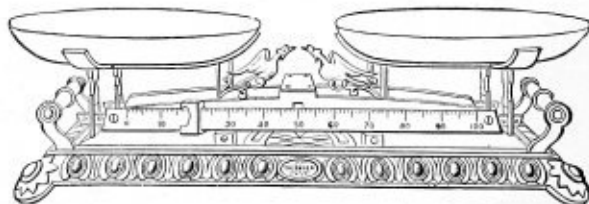
SILVER SCALE. No. 330.



Scale is the same as No. 35 shown below, except that it is smaller, having 9 in. pans and a capacity of 100 ounces; has side beam in front to save the handling of weights smaller than one ounce. All bearings are "Agate."

Price No. 330 \$32.50

SILVER SCALE. No. 35.



A new and reliable scale, of large capacity, for weighing large or small amounts; solid silver or plated ware, or any bulky matter; has "Agate" bearings, heavy 14 in. pans; with side beam on the front, which weighs to one ounce, and is divided into one hundred equal divisions, each representing the 100th part of an ounce; this saves the use of weights smaller than an ounce; scale will carry 300 ounces in each pan, and is used by Tiffany & Co., Gorham Mfg. Co. and others.

Price (without weights) No. 35 \$45.00

WEIGHTS AND CASES.

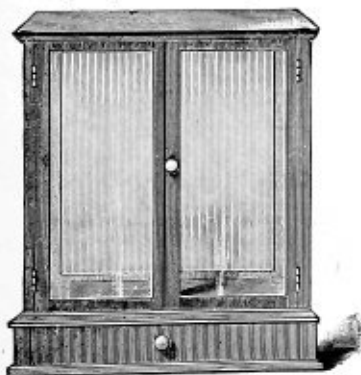
Troy Block Weights.
No. 38.

Solid brass in ash block.		
20 oz. to $\frac{1}{2}$ grain	....	\$7.00
30 " " "	....	9.00
50 " " "	....	12.50
100 " " "	....	18.00
200 " " "	....	27.00

Troy Cup Weights.
No. 59.

Solid Brass.

64 oz. to $\frac{1}{4}$ oz.	.....	\$9.00
32 oz. to $\frac{1}{4}$ oz.	.....	5.50
16 oz. to $\frac{1}{4}$ oz.	.....	4.00
8 oz. to $\frac{1}{4}$ oz.	.....	3.00
4 oz. to $\frac{1}{4}$ oz.	.....	1.50
10 pennywts. to $\frac{1}{2}$ gr.	.....	.50
$\frac{1}{2}$ pennywt to $\frac{1}{2}$ gr.	.....	.25



No. 1 \$9.00
 Inside measure, 14x14x6 $\frac{3}{4}$ inches.
 Walnut case, with double door
 and drawer; bottom of case is in
 polished mahogany, which is better
 than glass or marble.

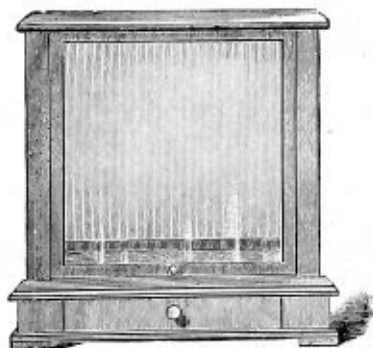
Troy Block Weights.
No. 37.

Solid brass in cherry block		
1 oz. to $\frac{1}{2}$ grain	\$1.00	
Two 2 " "	1.75	
5 " "	2.50	
10 " "	4.00	

Grain Weights, No. 23.



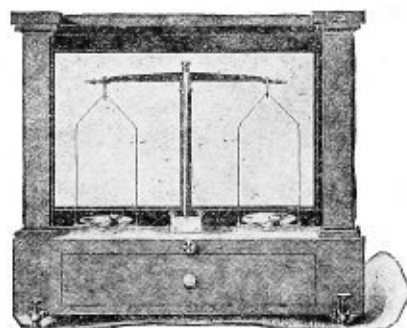
In mahogany box, with
 pincers; specially adapted
 for dispensing purposes.
 300 grain piece down
 to 1-10 grain.....\$1.75



No. 3 \$12.00
 Inside measure, 16 $\frac{1}{2}$ wide, 13 high,
 5 $\frac{3}{4}$ deep.

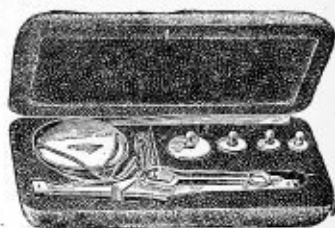
An elegant case of French pol-
 ished mahogany; counterpoised door
 sliding upward.

DIAMOND SCALES, SIEVES AND TWEEZERS.



In fine mahogany case, with counterpoised sliding door, has glass level and leveling feet; pans are movable, nickel; capacity, 100 carat, sensible to 1-500 carat; price includes a full set of weights, 100 carat and down to 1-64 carat, in mahogany, velvet-lined box.

No. 118. Price, \$32.00



Pocket Scale.

A good, low priced, reliable hand scale, correct throughout and sensitive. The weights are made with knobs, easy to handle and correct (64 carats in all).

No. 3. \$6.75

The case is leather covered, lined with velvet, with a reliable bar lock.

No. 3-a. \$7.50

This is mounted in a neat polished wood box.



STONE SIEVES.

From 1 to 20 Plates.

No. 4. \$18.00

From 1 to 40 Plates.

No. 5. \$30.00

PEARL SIEVES.

From 1 to 40 Plates.

No. 6. \$32.00



POCKET STONE SIEVES.

From 1 to 20 Plates.

No. 7. \$10.00



No. 8. Best Quality Diamond Tweezers, wide, medium and narrow points. Each \$1.00



No. 9. Fine Self-holding Diamond Tweezers, with claws. Each \$1.75

No. 10. Fine Self-holding Diamond Tweezers, with straight points. Each \$1.50

No. 11. Diamond Shovels (best quality). .75



No. 12. Accurate Stone Gauges, from 1 to 62. Each \$2.50

No. 13. Accurate Pearl Gauges, from 5 to 40. 1.60

DIAMOND SCALES AND WEIGHTS.



Upright Pocket Diamond Scale, an accurate Standard Scale. Has drop lever, by which it is raised and lowered, shows 5 full divisions for $1/64$, with full set of weights, 64 karats to $1/64$, fitted separately.

Pans suspended by woven silk cords or chain. The silk cords, however, are best to preserve the knife edges on this delicate balance.

No. 1 measures when closed $5 \times 2\frac{1}{4} \times 1\frac{1}{8}$ inches.

No. 2 measures when closed $6 \times 2\frac{1}{2} \times 1\frac{1}{4}$ inches.

Price for either size.....\$12.00

KARAT WEIGHTS.

In velvet-lined mahogany boxes with pincette, each weight fitted separately.

300 karats, down to $1/64$	\$8.00
100 karats, down to $1/64$	6.00
64 karats, down to $1/64$	5.00
1 karat, down to $1/64$, in paper box.....	1.00
2 karats, down to $1/64$, in paper box.....	1.20
Single weights, separate from full sets, each fraction.....	.51



GRAIN WEIGHTS.

Made of Aluminum Wire.



GRAMME WEIGHTS.

Made of Concave Sheet Aluminum.

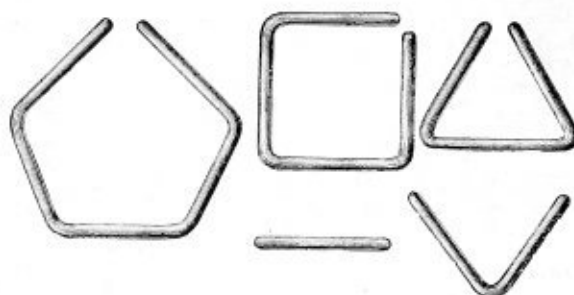
In Paper Boxes.

One	10 Grain to $\frac{1}{2}$ Sheet Aluminum, per set.....	\$0.40
One	10 Grain to $\frac{1}{2}$ German Silver, per set.....	.25
One	5 Grain to $\frac{1}{2}$ Aluminum Wire, per set.....	.25
One	12 Grain to $\frac{1}{2}$ German Silver or Aluminum, per set.....	.40
One	6 Grain to $\frac{1}{2}$ German Silver, per set.....	.35
One	500 mgrm. to 1 centigramme Aluminum, per set.....	.75
One	500 mgrm. to 1 milligramme Aluminum, per set.....	1.00
One	$5/10$ Grain to $1/10$ Aluminum Wire, per set.....	.50
One	5 Grain to $1/10$ Aluminum Wire, per set.....	.75

Use care in writing orders and avoid error.

TROEMNER'S DECIMAL GRAIN WEIGHTS.

All illustrations are exact sizes.

These are made of
nickel-silver.

Shapes

Pentagon is 50 grains

Square " 40 "

Triangle " 30 "

V " 20 "

" " 10 "

No. 61. The full set, 50 grains down to 10 grains.....\$0.60

TROEMNER'S ALUMINUM GRAIN WEIGHTS.

 $\frac{1}{2}$ to 5 Grains.

No. 55. Full set.....\$0.25

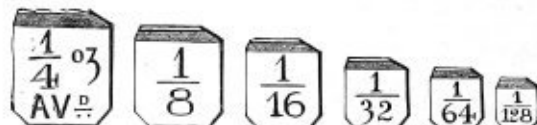
TROEMNER'S SQUARE ALUMINUM GRAIN WEIGHTS.



Pure sheet aluminum; made concave, so they can be picked up readily.

No. 56. $\frac{1}{2}$ gr. to 10, full set..\$0.40

TROEMNER'S AVOIRDUPOIS FRACTIONS OF OUNCES.



Set No. 60.

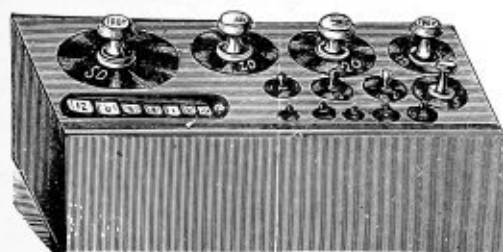
Made of nickel-silver.

Full set\$0.75

These weights are the fractions of the avoirdupois ounce, $\frac{1}{4}$ oz. and down to 1-128 avoirdupois ounce.

FINE TROY WEIGHTS FOR GOLD AND SILVER.

Accurately adjusted and finely finished, divided in ounces, pennyweights and grains. Grains of aluminum. Brass, heavily lacquered to prevent tarnishing.



IN POLISHED BLOCK



IN POLISHED BOX

No.			Down	Capacity	In box	In block
42.	One	1 oz.	piece to $\frac{1}{4}$ grain,	2 oz.	\$ 3.50	\$ 3.00
43.	One	2 "	" " " $\frac{1}{2}$ "	4 "	4.00	3.50
44.	Two	2 "	" " " $\frac{1}{2}$ "	6 "	4.50	4.00
45.	One	5 "	" " " $\frac{1}{2}$ "	10 "	6.00	5.00
46.	One	10 "	" " " $\frac{1}{2}$ "	20 "	7.50	6.50
47.	One	20 "	" " " $\frac{1}{2}$ "	40 "	11.00	9.00
48.	Two	20 "	" " " $\frac{1}{2}$ "	60 "	13.00	11.00
49.	One	50 "	" " " $\frac{1}{2}$ "	100 "	15.50	13.50
50.	One	100 "	" " " $\frac{1}{2}$ "	200 "	20.00	18.00
51.	Two	100 "	" " " $\frac{1}{2}$ "	300 "	25.00	23.00
52.	One	200 "	" " " $\frac{1}{2}$ "	400 "	29.00	26.00
53.	Two	200 "	" " " $\frac{1}{2}$ "	600 "	36.00	33.00
54.	One	500 "	" " " $\frac{1}{2}$ "	1,000 "	43.00	40.00
10	pwts. to $\frac{1}{4}$ grain, in paper box, flat weights, per set.					.75
6	" " " $\frac{1}{4}$ " " " " " " " " " " " "					.50

Single Brass Weights, separate from full sets.

	500	200	100	50	20	10	5	2	1 oz.	10	5	2 1 pwt.
Price,	\$11.00	6.50	4.50	2.50	1.40	1.00	70c	55c	40c	30c	25c	20c 20c

Aluminum Grain Weights, 12 to $\frac{1}{16}$, per set, 40c.

Aluminum Grain Weights, 12 to 1/4, per set, 40c.

COMMON BRASS TROY WEIGHTS. ROUGHLY FINISHED, LACQUERED,
BUT ACCURATE.

In oiled walnut blocks. Divided in ounces, pennyweights and grains.

No.	42a.	1 oz., down to	$\frac{1}{2}$ grain.	2 oz. capacity, price,	\$1.00
"	43a.	2 " " " "	$\frac{1}{4}$ " " " "	4 " " " "	1.60
"	44a.	4 " " " "	$\frac{1}{2}$ " " " "	8 " " " "	2.25
"	45a.	5 " " " "	$\frac{1}{2}$ " " " "	10 " " " "	2.50
"	46a.	10 " " " "	$\frac{1}{2}$ " " " "	20 " " " "	4.00

Single Common Troy, separately.

	10 oz.	5 oz.	4 oz.	2 oz.	1 oz.	10 pwt.	5 pwt.	2 pwt.	1 pwt.
Price,	80c	60c	50c	40c	30c	20c	20c	15c	10c
Grain Weights, 12 to 1½, per set.....									25c

Write your orders by our new system—it's a great help.

TOOL MAKERS' HAND SCRAPERS.

MOUNTED IN HIGHLY POLISHED ROSEWOOD FINISH HANDLES.

No. 3. HOLLOW
THREE SQUARE.No. 3 Blade is $3\frac{1}{4}$ " long. Dozen.....\$6.00

(No. 7) SOLID THREE SQUARE.

Length of Blades.....	6"	8"	10"
Dozen	\$10.00	\$12.00	\$15.00



(No. 8) HALF-ROUND CONCAVE.

Length of Blades.....	6"	8"	10"
Dozen	\$10.00	\$12.00	\$15.00

UNMOUNTED SCRAPERS.



No. 6 Double End. 10 inches long. Dozen....\$15.00



(No. 4) SOLID THREE SQUARE.

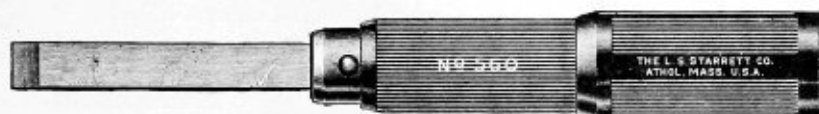
Length of Blades.....	6"	8"	10"
Dozen	\$ 8.00	\$10.00	\$12.00



(No. 5) HALF-ROUND.

Length of Blades.....	6"	8"	10"
Dozen	\$8.00	\$10.00	\$13.00

POCKET SCREW DRIVERS.



The handle of this tool is covered with hard rubber for insulation from electrical currents, and is nicely ribbed so as to insure a firm grip when using the tool. It has four blades of different widths, any one of which may quickly be taken from the telescope handle and inserted in the end, where it is automatically locked and firmly held for use. Any or all of the blades are carried in the handle, where by a spring pressure they are held from rattling when carried in the pocket, or from being lost when the cap is off. While the cap may be readily pulled off or put on, it is rigidly held from turning and frictionally held from coming off, with no screws to bind or bother.

The smaller blades may be used to make holes in wood for screws as well as to drive them home. Every electrical mechanic, or operator working among electrical wires or machinery, will appreciate these insulated Screw Drivers as a valued protection against electrical shocks.

The widths of the blades are 3-32 in., 5-32 in., $\frac{1}{4}$ in. and $\frac{3}{8}$ in.

No. 560.	Price, complete.....	\$1.50
" 560A.	Extra Blades, each.....	.10

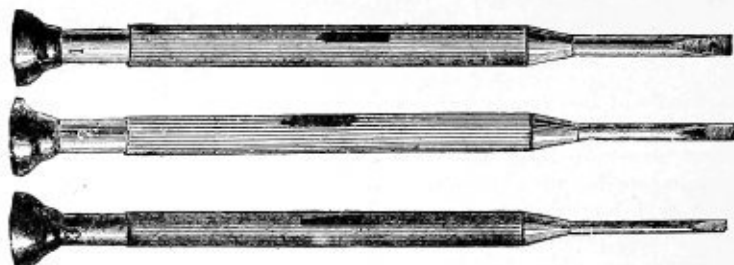
Specify width of blades.



This screw driver is designed for those using small screws, especially opticians, watch and clock makers. The body is made of 5/16 inch steel tubing, having a swivel hexagonal head and a chuck to admit of interchangeable blades. The spring fingers are frictionally held to the screw driver blade and may be slipped off or on. Pressing the bowed part between the thumb and fingers opens the jaws to pick up by the head and hold the smallest screw. Drawing the holder back on the blade and rotating same the blade will enter the slot in screw, which, being held to the screw driver blade, may be placed and screwed home without danger of dropping or losing it. Screws may also be held and inserted in places where it would otherwise be difficult or impossible. When the screw holder is not needed it may be slipped back on the blade, out of the way.

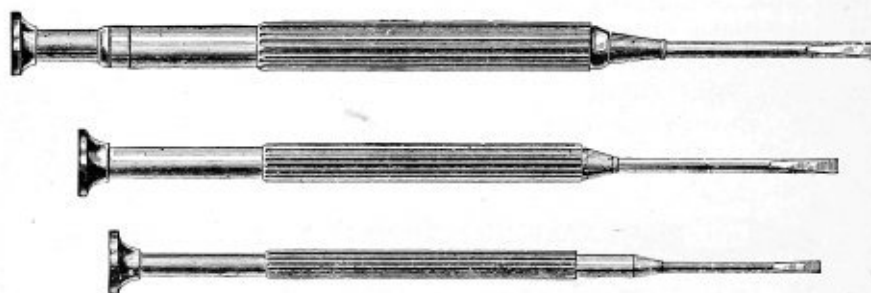
No. 552A.	Complete Screw Driver, with two blades and screw holder.....	\$0.65
" 552B.	Screw Driver with two blades.....	.50
" 552C.	Screw Holder .....	.15
" 552D.	Extra Blades, each.....	.10

SCREW DRIVERS
FOR JEWELERS AND WATCHMAKERS.



Above illustrations represent the Standard Common Driver—well known to the trade.

	Dozen	Each
All Sizes, Nos. 1, 2, 3, 4 and 5.....	\$1.00	10c



These are better drivers than those shown at top of pages Nos. 1 to 5.

	Extra Large	Large	Medium	Small	
	No. 6	No. 7	No. 8	No. 9	
All Sizes, Nos. 6, 7, 8 and 9.....	Doz., \$1.50				Each, 15c



Driver with adjustable chuck. All sizes.....35c each

Number	A	B	C	D	E
Width of Blade....	.040"	.055"	.070"	.080"	.100"

Note—Order, viz.: $\frac{1}{2}$ Gr., No. 2—522; or,
1 only, No. C—522.

POCKET SCREW DRIVERS.



OPEN.



CLOSED.

(No. 414.)

Rubber handle and nickel-plated cap, convenient tool, well finished. . . . Price, \$0.40



OPEN.

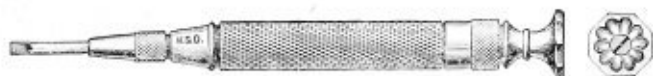


CLOSED.

(No. 415.)

Rubber handle, fitted with chuck, holding double end reversible blade. Price, \$0.60

No. 418. POCKET MAGAZINE SCREW DRIVER.



The handle of this tool is hollow and contains four extra blades; the chuck is adjustable, with reversing blade. Price, \$0.85

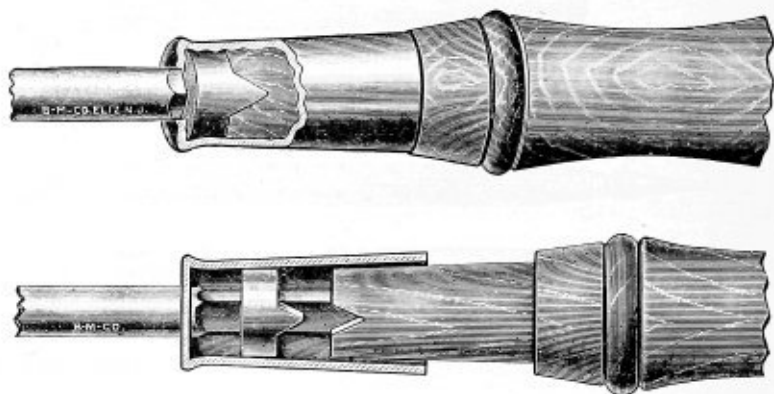


CLOSED.

No. 533 A	Handle $\frac{1}{4}$ in. diam., blade $1\frac{1}{8}$ in. long, weight $\frac{1}{2}$ oz.	\$0.25
No. 533 B	Handle $\frac{3}{8}$ in. diam., blade 3 in. long, weight $1\frac{1}{2}$ oz. . . . .	.35
Extra Blades, each. . . . .		.10

NEW CENTURY SCREW DRIVERS.

Patented Aug. 21, 1906.



By means of the Sliding Toothed Bolster we accomplish two things most effectually.

First.—The joining and locking of the blade to the handle so no amount of abuse will make them let go.

Next.—The transmission of a hammer blow to the blade from the bottom of the handle neck, same as, for instance, a tanged carpenter's chisel, thus preventing the handle from splitting. This construction makes them stronger than they need be without loading the handles with metal.



No. 100. Polished Handles, Rosewood Finish.

Number	A	B	C	D	E	G	H	J	K	L
Length of Blade ..	2 in.	2½ in.	3 in.	4 in.	5 in.	6 in.	7 in.	8 in.	10 in.	12 in.
Dozen	\$3.00	3.00	3.50	4.25	5.00	6.00	7.00	8.00	10.00	12.00

Write your order this way, viz.: ½ Doz. G—524.

"PERFECT"

ALL STEEL SCREW DRIVERS.



From Hammer Head to Driver Tip A SOLID, ONE PIECE, DROP-FORGING.



SHOWING FINISHED HANDLE.

These handles are treated with our water-proofing process which renders them impervious to water. They are finished in their natural color—a rich red—which with the water-proofing gives them a finish much preferred by imitations of ebony, rosewood and other apings of the real.

No Argument Necessary! Can't Break or Twist that Handle!

"ALL ITS VALUE IN PLAIN SIGHT."

Number,	A	B	C	D	E	G	H	J	K
Blade Length, ins.,	2	3	4	5	6	7	8	10	12
Diameter, inches,	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	5-16	5-16	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$
List Price, doz.,	\$4.25	\$4.25	\$4.25	\$5.00	\$6.00	\$7.00	\$8.00	\$10.00	\$12.00

HEAVY SERVICE SCREW DRIVER.

Put a wrench onto the Square Shank when you want to tighten or loosen Screws. Put all the power you wish back of the wrench. The maker's unqualified guarantee is back of the Screw Driver.



Front View.

	Made in Two Sizes,	Nos. 9 $\frac{1}{2}$	10 $\frac{1}{2}$
Length over all.....		9	10 $\frac{1}{2}$ inches
Length of Blade.....		4 $\frac{1}{2}$	5 "
Size of Square.....		7/16	9/16 "
Width of Point.....		$\frac{1}{2}$	$\frac{3}{4}$ "
Thickness of Point.....		1/16	5/64 "
List Price		\$12.00	\$13.00 per dozen

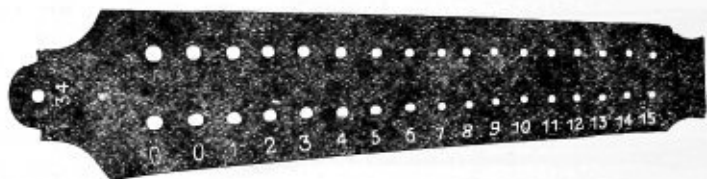


Side View.

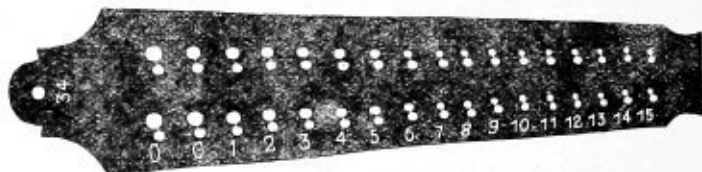
How to write your order, viz.: $\frac{1}{4}$ Doz., No. 9 $\frac{1}{2}$ —525.

SWISS SCREW PLATES.

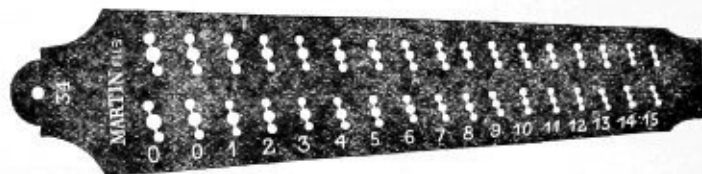
To Cut Right Hand Threads.



No. A. 2 Row Plain, 2c Per Hole.



No. B. 2 Row Single Notched, 2½c Per Hole.

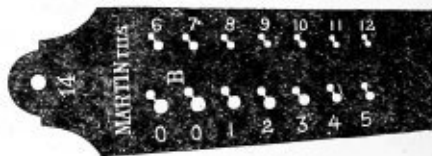


No. C. 2 Row Double Notched, 3c Per Hole.

Note.—The above illustrations represent plates having 34 holes each. These are most in demand. We can furnish 40, also 48 hole plates when desired.



No. D.
12 Holes Double Notched.
3c Per Hole.



No. E.
14 Holes Single Notched.
2½c per hole.

Note.—We can furnish plates to cut left hand threads, but we do not aim to carry but a few as they are rarely used.

We guarantee best possible service.

No. 401. WATCHMAKERS' SCREW PLATE.



Set No. 401. Stock, $3\frac{1}{4}$ inches long;
 Dies, $7/16$ inch in diameter; 4 Taps
 and 5 Dies, including Tap Wrench
 Die; cutting 80, 100, 120, 140 threads.
 Price Each\$3.50

No. A. Extra Dies. Price Each..... .35

No. B. Extra Taps. " "35

The sizes and threads in this Plate correspond to the sizes of watch screws.
 The Dies in this Plate are adjustable for making tight or loose fits.

No. 402. JEWELERS' SCREW PLATE.

Set No. 402. Stock, $3\frac{1}{4}$ inches long;
 Dies, $7/16$ inch in diameter; 4 Taps
 and 5 Dies, including Tap Wrench
 Die; cutting $1/16$, 72; $3/32$, 60; $1/8$,
 50, $9/64$, 40\$3.50

No. C. Extra Dies..... .35



We have selected these sizes and threads as those best suited to the use
 of jewelers.

The Dies in this Plate are adjustable for making tight or loose fits.

Plug Taps are sent with these Plates.

Both the above Plates are put up in hard wood cases.

Order Extra Taps—2 only A—100—527.

" " Dies—1 " C—50—527.

Odd or irregular sizes must be specified.

No. 301. DIAMOND SCREW PLATES.



Set Diamond A.	Price Each.
Stock, 5 inches long; Tap Wrench, 5 inches long; 6 Dies, five-eighths of an inch in diameter, and 6 Taps; cutting 4, 36; 6, 32; 8, 32; 10, 24; 12, 24; 14, 20.....	\$4.90
Set Diamond B.	
Stock, 5 inches long; Tap Wrench, 5 inches long; 5 Dies, five-eighths of an inch in diameter, and 5 Taps; cutting 4, 36; 6, 32; 8, 32; 10, 24; 12, 24.....	4.40
Set Diamond C.	
Stock, 5 inches long; Tap Wrench, 5 inches long; 4 Dies, five-eighths of an inch in diameter, and 4 Taps; cutting 6, 32; 8, 32; 10, 24; 12, 24.....	3.90
Set Diamond D.	
Stock, 5 inches long; Tap Wrench, 5 inches long; 8 Dies, five-eighths of an inch in diameter, and 8 Taps; cutting 2, 56; 3, 48; 4, 36; 6, 32; 8, 32; 10, 24; 12, 24; 14, 20.....	6.20
Set Diamond E.	
Stock, 5 inches long; Tap Wrench, 5 inches long; 10 Dies, five-eighths of an inch in diameter, and 10 Taps; cutting 2, 56; 3, 48; 4, 36; 5, 32; 6, 32; 8, 32; 10, 32; 10, 24; 12, 24; 14, 20	7.25

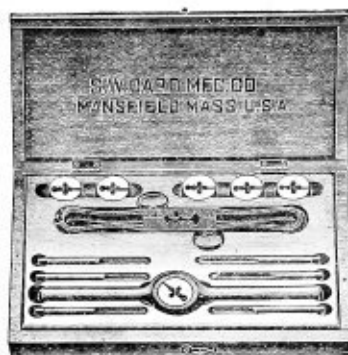
Please Note—All Diamond Screw Plate Sets listed above contain an Adjustable Tap Wrench.

No. 301. DIAMOND SCREW PLATES.

(Continued.)

Set Diamond N.	Price Each.
Stock, 7 inches long; Tap Wrench, 7½ inches long; 5 Dies, thirteen-sixteenths of an inch in diameter, and 5 Taps; cutting 4, 36; 6, 32; 8, 32; 10, 24; 12, 24.....	\$5.65
Set Diamond N-N.	
Stock, 7 inches long; Tap Wrench, 7½ inches long; 6 Dies, thirteen-sixteenths of an inch in diameter, and 6 Taps; cutting 4, 36; 6, 32; 8, 32; 10, 24; 12, 24; 14, 20.....	6.25
Set Diamond P-2.	
Stock, 7 inches long; Tap Wrench, 7½ inches long; 10 Dies, thirteen-sixteenths of an inch in diameter, and 10 Taps; cutting 2, 56; 3, 48; 4, 36; 6, 32; 8, 32; 10, 24; 12, 24; 14, 20; 16, 18; 18, 18.....	8.00
Set Diamond Q.	
Stock, 7 inches long; Tap Wrench, 7½ inches long; 5 Dies, thirteen-sixteenths of an inch in diameter, and 5 Taps; cutting ⅜, 40; 5/32, 32; 3/16, 24; 7/32, 24; ¼, 20.....	5.75
Set Diamond R.	
Stock, 7 inches long; Tap Wrench, 7½ inches long; 6 Dies, thirteen-sixteenths of an inch in diameter, and 6 Taps; cutting ⅜, 40; 5/32, 32; 3/16, 24; 7/32, 24; ¼, 20; 5/16, 18	6.50
Set Diamond S.	
Stock, 7 inches long; Tap Wrench, 7½ inches long; 5 Dies, thirteen-sixteenths of an inch in diameter, and 5 Taps; cutting 1/16, 72; ⅜, 40; 3/16, 24; ¼, 20; 5/16, 18.....	5.75
Set Diamond T.	
Stock, 7 inches long; Tap Wrench, 7½ inches long; 9 Dies, thirteen-sixteenths of an inch in diameter, and 9 Taps; cutting 1/16, 72; 3/32, 56; ⅜, 40; 5/32, 32; 3/16, 24; 7/32, 24; ¼, 20; 9/32, 20; 5/16, 18.....	8.50

Please Note—All Diamond Screw Plate Sets listed above contain an Adjustable Tap Wrench.

No. 302. BICYCLE SCREW
PLATES.No. 121. BICYCLE TAPER
TAPS.

Left-hand Bicycle Taper Taps, $\frac{1}{2}$ inch
20 and 24, furnished at regular list and
discount.

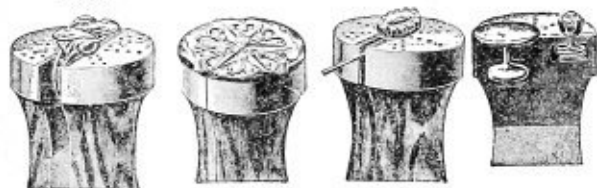
Set No. 1.	Price Each.
Stock, 5 inches long; Dies, $\frac{5}{8}$ inch in diameter; 6 Dies and 6 Taps; Handy Tap Wrench; cutting 3/32, 54; $\frac{1}{8}$, 40; $\frac{1}{8}$, 42; 3, 48; 3, 56; 6, 38.....	\$4.40
Set No. 2.	
Stock, 5 inches long; Dies, $\frac{5}{8}$ inch in diameter; 6 Dies and 6 Taps; Handy Tap Wrench; cutting 3/32, 56; 7/64, 56; 9/64, 40; 1, 64; $1\frac{1}{2}$, 56; 2, 48.....	4.40
Set No. 3.	
Stock, 5 inches long; Dies, $\frac{5}{8}$ inch in diameter; 14 Dies and 14 Taps; Handy Tap Wrench; cutting 3/32, 52; 3/32, 54; 3/32, 56; 7/64, 56; $\frac{1}{8}$, 40; $\frac{1}{8}$, 42; 9/64, 40; 1, 64; $1\frac{1}{2}$, 56; 2, 48; 3, 48; 3, 56; 4, 42; 6, 38.....	8.90
Set No. 4.	
Stock, 5 inches long; Dies, $\frac{5}{8}$ inch in diameter; 6 Dies and 6 Taps; Handy Tap Wrench; cutting 1, 72; 1, 64; 1/16, 72; 2, 56; 3, 56; 105, 40.....	4.40

	Diameter	Threads	Price Each
No. 121. BICYCLE TAPER TAPS.	$\frac{1}{4}$	20, 22, 24, 26, 28, 30, 32	\$0.45
	$\frac{5}{16}$	20, 22, 24, 26, 28, 30, 32	.50
	$\frac{3}{8}$	20, 22, 24, 26, 28, 30, 32	.55
	$\frac{7}{16}$	20, 22, 24, 26, 28, 30, 32	.60
	$\frac{1}{2}$	20, 22, 24, 26, 28, 30, 32	.70
	$\frac{9}{16}$	20, 22, 24, 26, 28, 30, 32	.80
	$\frac{5}{8}$	20, 22, 24, 26, 28, 30, 32	.90

SETTING HOLDERS.

The adjoining illustration shows the National Universal Jewelry Holder in full size. The illustrations below, the heads or ends in $\frac{1}{2}$ size, and various articles that this holder will hold.

Unquestionably the best holder made. Price, \$1.50, includes a full set of pins, directions and useful hints.



No. 1.
\$1.50 Each



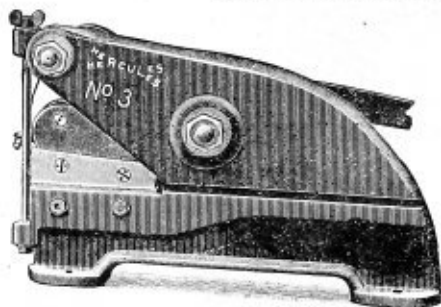
No. 2.
\$2.50 Each



No. 3.
Set of Three
Holders,
Joel's Patent,
Complete, \$2.25

Order by respective numbers, viz.: $\frac{1}{4}$ Doz., No. 3—531.

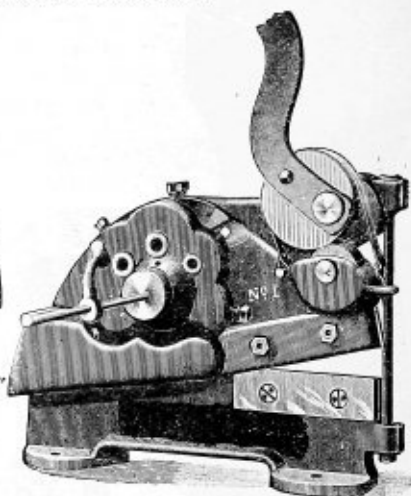
BENCH SHEARS AND ROD CUTTERS.



(No. 3) \$26.00

This shear will cut flat iron only, $\frac{1}{4}$ " and under.

Weight, 100 lbs.

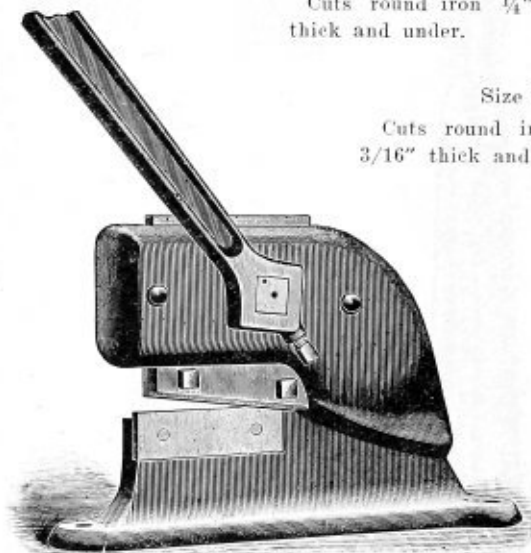


Size No. 0. \$20.00.

Cuts round iron $\frac{1}{4}$ " and under, flat iron, $\frac{1}{16}$ " thick and under.

Size No. 1. \$33.00.

Cuts round iron $\frac{1}{2}$ " and under; flat iron, $\frac{3}{16}$ " thick and under.



No. 5. \$15.00.

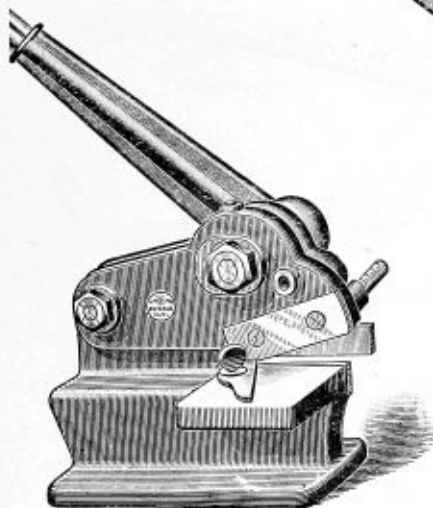
Will cut sheets or bars not exceeding $\frac{3}{32}$ " thick or even thicker if soft stock. Stands only 8 inches high, and weighs 30 lbs.

Note—

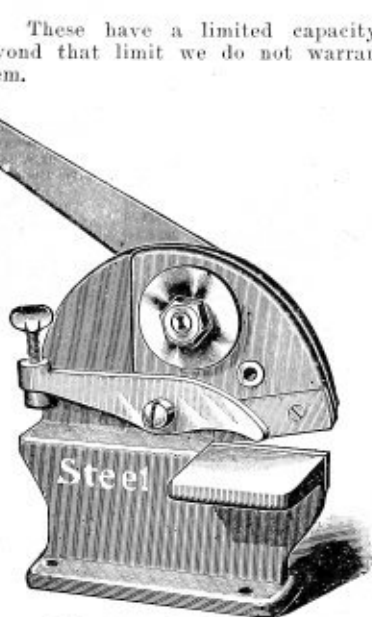
Our new system of writing orders is of value to you in checking your bill. It tells you the page on which to find the item in question.

OLIVER'S
SHEARS AND ROD CUTTERS.

These have a limited capacity;
beyond that limit we do not warrant
them.



(No. 1) \$15.00.



(No. 1 1/2) \$20.00



No. 1—Shear and Rod Cutter
(Harnous)\$15.00

No. 1—Blades, per pair (Hances) .75
Length of Blades, 3".
Capacity in flat iron thickness, 1/8".
Capacity, will cut iron rods up to
5/16" diameter.

No. 1 1/2—Price (Harm).....\$20.00
Price, blades per pr. (Hances) 0.75
Length of Blades, 3".
Maximum capacity in flat iron thick-
ness, 3/16".
Maximum capacity in iron rod diam-
eter, 5/16".

No. 2—Price without Column
(Haste)\$25.00

No. 2C—Price with Column
(Hasty) 30.00
Price Blades, per pair (Hatch). 1.00
Length of Blades, 4".
Maximum Capacity in flat iron thick-
ness, 1/4".
Maximum capacity in iron rod diam-
eter, 3/8".

JEWELER'S SNIPS.

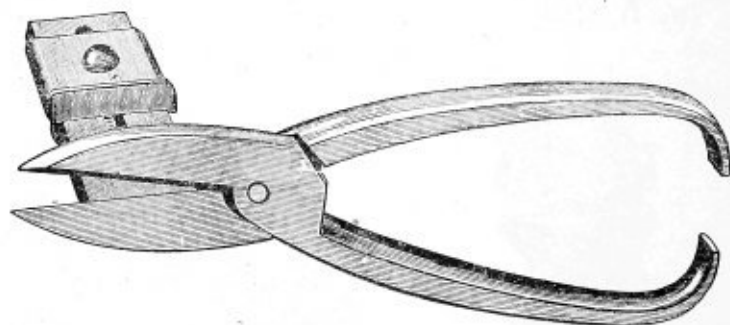
POLISHED BLADES AND HANDLES.



(No. 29) RIGHT HAND.

Number.....	A	B	C	D	E	G	H
Full length, ins.	5	5½	6	6½	7	7½	8
Price per doz..	\$11.00	\$11.00	\$11.00	\$11.80	\$12.80	\$13.80	\$15.00

NOTE—We can furnish this shear with narrower and more pointed blades at the same prices. If these are wanted be sure to specify narrow pointed blades.



RIGHT HAND.

Number.....	J	K	L	M	N	P
Length over all.....	6"	6½"	7"	7½"	8"	8½"
Length of cut.....	1½	1¾	1¾	1¾	2¼	2¼
Price each	\$1.85	\$2.00	\$2.10	\$2.25	\$2.40	\$2.50

We can furnish these snips "Left Hand" which brings the gauge on the opposite side. If these are wanted, Be Sure to Specify Left Hand.

SILVERSMITH'S SHEARS**"IMPORTED"****NATURAL BLACK FINISH**

Illustration shows Left Hand Shears with Straight Blades. These Shears are made in England. They are standard goods—too well known to require comment by us.

Number	A	B	C	D	E	G	H
Length over all	8"	9"	10"	11"	12"	13"	14"
" of cut	2	2¼	2½	2¾	3	3¼	3½
Price per doz	\$10.00	\$11.25	\$12.00	\$15.00	\$21.00	\$24.00	\$27.00
" each	.90	1.00	1.25	1.50	2.00	2.25	2.50

IMPORTED SHEARS WITH CURVED BLADES.

Same style as above.

Blades are left-hand cutting.

Number	J	K	L	M	N	P	R
Length over all	8"	9"	10"	11"	12"	13"	14"
Price per doz	\$16.50	\$18.00	\$21.00	\$24.00	\$27.00	\$33.00	\$36.00
" each	1.50	1.65	1.90	2.25	2.50	3.00	3.25

AMERICAN MADE SILVERSMITH SHEARS.

These are made in the same design of the imported shears, shown above. They are hand forged. The steel is the very best quality, specially made for shear purpose. These shears are known and used by the largest number of New England silversmiths.

WITH STRAIGHT BLADES.

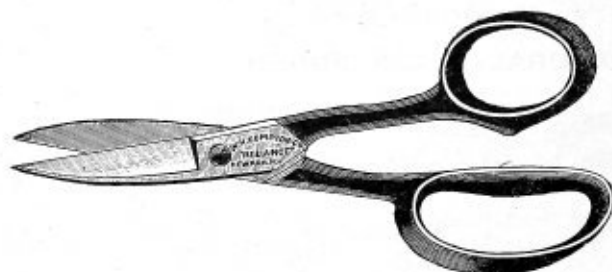
No	Length	Each
T	10"	\$2.25
U	12"	2.75
V	14"	3.25

WITH CURVED BLADES.

No.	Length	Each
W	10"	\$2.75
X	12"	3.25
Y	14"	3.75

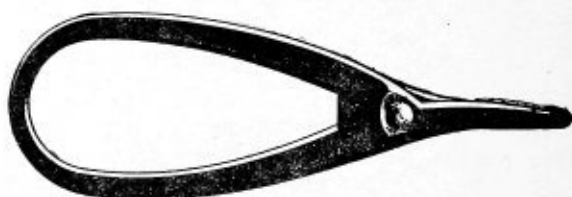
Be sure to write your order this way, viz.: 2 only, No. U—535.

JEWELERS' SHEARS.



THIS IS ONE OF
THE BEST SHEARS
MADE FOR
CUTTING
THIN METALS.

Full Length	7½ in.	8 in.
Length of Cut.....	2 in.	2½ in.
Per doz.—Plain Screw, Straight Blades.....	No. A \$16.00	No. E \$18.00
Per doz.—Screw and Nut, “ “	“ B 20.00	“ G 22.00
With Curved Blades—Plain Screw... Per Dozen, “ C	36.00	“ H 38.00
“ “ “ —Screw and Nut “ “ D	40.00	“ J 42.00



This illustration represents a Shear specially made for cutting thin metals only. It will cut a straight line or any curve equally as well without bending the sheet out of shape.

A MOST EXCELLENT TOOL.

No. K. \$1.50 each.

Special Note.—When ordering goods from this catalog please write your orders thus—viz., 1 only No. C—536, or ¼ doz. No. K—536.

Always affix the page number to the item number. By so doing we can fill your order quicker and you can check your invoice in one-tenth less time than by any other way.

HAND SHEARS FOR RIGHT-HANDED MECHANICS.

No tool receives so hard a test as Hand Shears. Therefore, the "Compton" Shears are made of the **Best** of Materials throughout, and Special Care is used in Hardening, Tempering, Grinding and Finishing. Every operation is made by trained experts—every one a master of his craft. Each pair warranted with an unlimited guarantee, exchanging any tool not satisfactory in every particular.

With
Straight
Blades



Number.....	6½	7	8	9	10	11	12
Full Length.....	15½ in.	14 in.	13 in.	12 in.	11 in.	9 in.	8 in.
Length of Cut....	4½ in.	4 in.	3½ in.	3 in.	2½ in.	2¼ in.	2 in.
Price per pair....	\$3.00	2.50	2.00	1.50	1.40	1.20	1.05
Left Hand per pair	3.00	2.50					

With
Curved
Blades

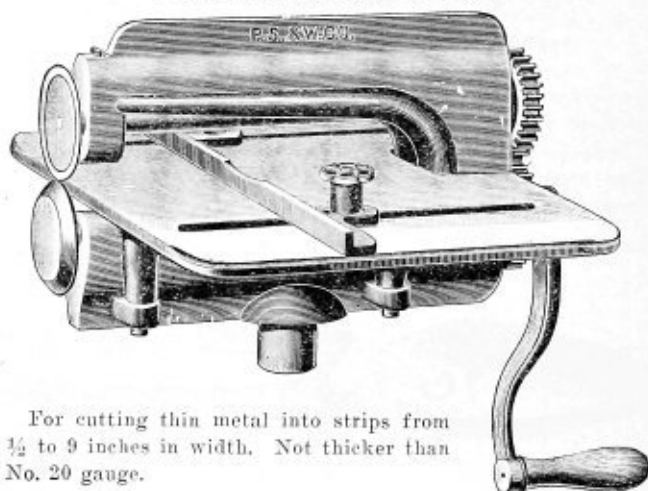


Number.....	6½ C.B.	7 C.B.	8 C.B.	9 C.B.	10 C.B.	11 C.B.	12 C.B.
Full Length.....	15½ in.	14 in.	13 in.	12 in.	11 in.	9 in.	8 in.
Length of Cut....	4½ in.	4 in.	3½ in.	3 in.	2½ in.	2¼ in.	2 in.
Price per pair....	\$4.25	3.50	3.00	2.50	2.25	1.95	1.80
Left Hand per pair	4.00	3.50					

The Length of Cut is the Standard Cutting Edge of Blade.

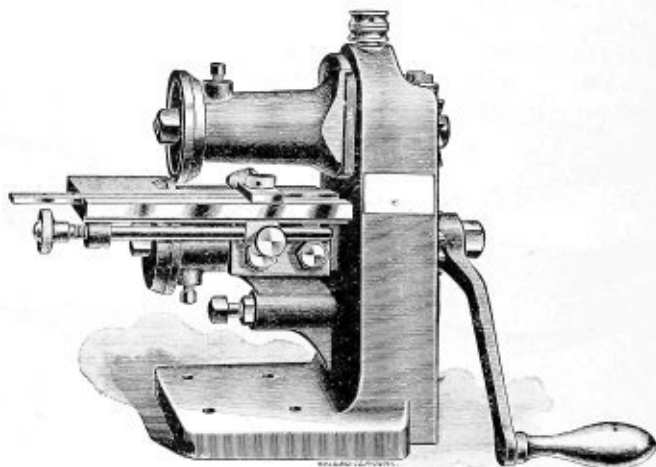
Note.—If Shears are wanted for Left-Handed Mechanics **BE SURE TO SPECIFY SAME.** Otherwise we always send them like illustrations.

ROTARY SLITTING SHEARS.



For cutting thin metal into strips from
 $\frac{1}{2}$ to 9 inches in width. Not thicker than
 No. 20 gauge.

(No. 20).....\$25.00



(No. 1).....\$45.00

This Shear is built extra heavy. The upper cutter is adjustable, in order to give more or less lap for the different thicknesses of stock. The gauge for width can be quickly moved, and has a screw adjustment for exactness. All parts are scraped to fit, and all bearings are amply large, giving the machine ease of running.

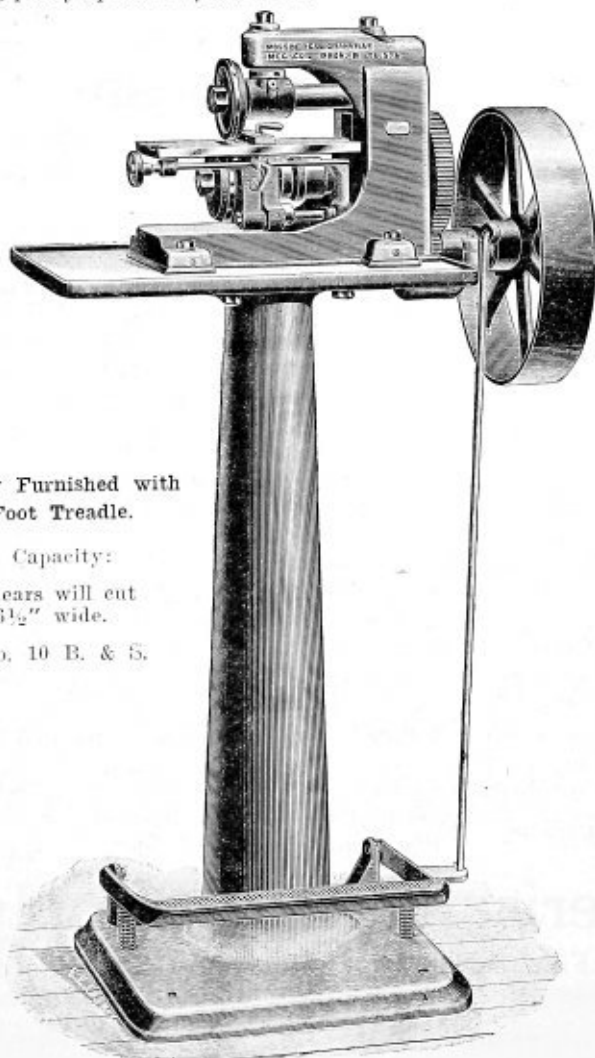
Will cut, width $3\frac{1}{4}$ ", thickness No. 16 B. & S.

Diameter of cutters 3"; net weight, 25 lbs.

POWER ROTARY SLITTING SHEARS.

Details and price upon application.

These Shears are built extra heavy to prevent springing, as we find that for the work for which they are designed the cutters are dulled more by springing and rubbing against each other than by the actual work in stripping stock. The upper cutter is adjustable in order to give more or less lap for the different thicknesses of stock, and to allow for grinding. The gauge for width can be quickly moved, and has a screw adjustment for exactness. When running by power the machine can be started or stopped at will of the operator by means of a clutch on the driving pulley operated by a treadle.



Now Furnished with
Foot Treadle.

Capacity:

Shears will cut
6½" wide.

No. 10 B. & S.

FOUND AT LAST

A REAL

ALUMINUM SOLDER

REINHOLD "NOFLUX" ALUMINUM SOLDER

Is a practical, technical and commercial success.

Solders Aluminum to Aluminum perfectly, without using a flux. Has been on public sale since September, 1908, and under continuous tests of all kinds since February, 1908. Absolutely no flux is required. The Solder flows freely and evenly on all parts soldered and makes a perfect joint.

By using the "Noflux" solder in connection with REINHOLD COMBINATION SOLDER Aluminum can be soldered to other metals perfectly.

The solder is GUARANTEED to us by the manufacturer as follows:

"We guarantee that the Reinhold Noflux Aluminum Solder can be used by anyone with an ordinary clean Soldering Iron, Blow Pipe or Gasolene Torch, without flux; that the parts soldered will be and will remain stronger than the metals soldered, that the solder will not disintegrate, nor will it be separated by electricity, if used according to the directions accompanying each bar of Solder."

PRICES.

Small Size "Noflux" Solder (20 bars to a pound)	25c.
Large " " " (8 " " ")	50c.
Combination Solder (18 " " ")	25c.

Prices to Jobbers on application.

Prices quoted are per bar.

American Oil & Supply Co.

Fine Tools, Machinery and Supplies for
Jewelers, Silversmiths and Metal Workers.

52-56 Lafayette Street, :: :: Newark, N. J.

SILVER SOLDERS.



Silver Solder, 1st quality....50c per sheet

Silver Solder, 2d quality.....30c per sheet

Each Sheet weighs $\frac{1}{4}$ ounce.



FIRST
QUALITY
CLIPPED
SILVER
SOLDER.



No. 1—Fine. No. 2—Coarse.
2 pwts. in bottle..25c per bottle
3 pwts. in bottle..40c per bottle
Pulverized Silver Solder in $\frac{1}{4}$
oz. bottle.....50c per bottle

SILVER SOLDER

FOR BRAZING BAND SAWS.

1 Ounce of a Size in a Box.

Widths, $\frac{1}{2}$ ", $\frac{5}{8}$ ", $\frac{3}{4}$ ", $\frac{7}{8}$ " and 1".

Thicknesses, .002", .003" and .004".

Any Width and Thickness \$1.00 per oz.



$\frac{1}{4}$ oz. Coil, 30c
Silver Wire Solder, B. & S.
gauge. Sizes 16, 18, 20.



Always specify the Width and Thickness desired.

SPECIAL PRICES FOR QUANTITIES.

SOLDERS.



Easy Flowing Gold Solder

In 1 dwt. Sheets

Grade	6 K	8 K	10 K	12 K
Sheet	\$0.25	\$0.30	\$0.40	\$0.50
Grade	14 K	16 K	18 K	20 K
Sheet	\$0.60	\$0.70	\$0.80	\$0.90

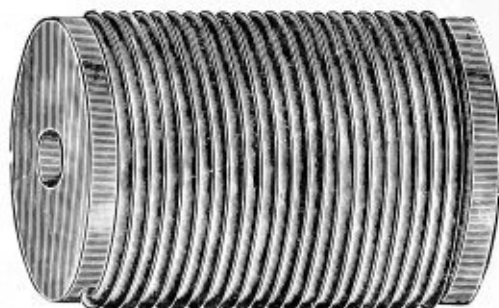
BRASS SHEET SOLDER.

For Brass, Copper or any metal where a fair amount of heat may be used.

Easy Flowing20c per oz.

EXTRA Easy Flowing....40c per oz.

SOFT SOLDERS.



1/16" Diam. 1/2 lb. on a Spool, 60c per lb.

1/16" Diam. 1 lb. on a Spool, 45c per lb.

HIGH GRADE SOFT SOLDER.

1 Ounce Bundles.....\$0.50 per pound

Single Bundle, 5c

SUPERFINE SOFT SOLDER.

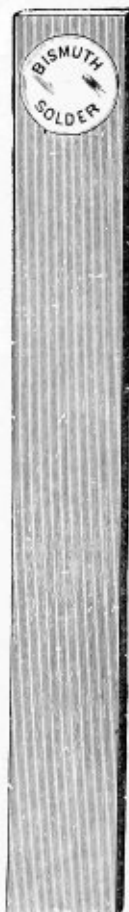
1 Ounce Bundles.....60c per pound

Single Bundles, 6c

SOFT SOLDER IN COIL.

Sizes Diameter	1/16"	3/32"	1/8"
----------------	-------	-------	------

Per Pound	\$0.40	\$0.40	\$0.35
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Bismuth Solder.

1 oz. prices
per lb., \$1.10

Prices subject to
change according
to metal market
on Bismuth.

(SPECIAL PRICES FOR QUANTITIES ON APPLICATION.)

LAFAYETTE BRASS SPELTER SOLDER

For Brazing

BRASS, COPPER AND STEEL

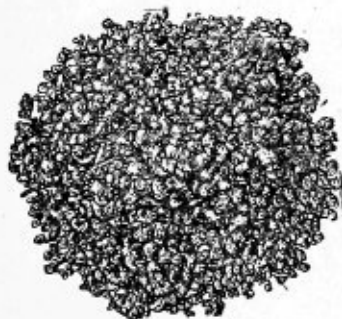
Is a Quality that Can Be Absolutely Relied On Both for
Free Flowing and Strength of Seam.



No. "A"
Fine Long Grain
For Coarse Heavy Work
45c per lb.



No. "B"
Extra Fine Long Grain
For General Use
45c per lb.



No. "C"
Coarse Round Grain
For General Use
Regular Quality, 45c lb.



No. "E"
Fine Round Grain
Regular Quality
45c per lb.

No. "D"
An Extra Fine Quality
Round Grain Quick Running
60c per lb.

No. "G"
An Extra Fine Quality
Round Grain Quick Running
60c per lb.

No. "H" 85c per lb. This is an Extra Quality for very fine work. It is quick running and thoroughly reliable.

Anything you want in Solder line, for Brazing and Soldering, don't hesitate to write us.

Our Motto: High Grade Goods—Prompt Shipments—Bottom Prices.

YAGER'S SOLDERING SALTS.

A dry salt in small bulk.



Add a little water and it is ready for instant use. Yager's Salts causes the solder to flow evenly. It is free from disagreeable fumes and the injurious effects experienced by the use of acid. It leaves the metal bright and clean. It can be used on damp surfaces.

No. A	1 1/2 lb. Bottle.....	\$0.50
No. B	1 " " ".....	.80
No. C	5 " " ".....	3.00

PREPARED BORAX.



This Borax is specially prepared. Put up into sticks similar to illustration weighing 2 oz. each.

No. D Single stick\$0.05

No. E Per pound35

Each stick is wrapped in tinfoil.

One pound orders, packed in boxes containing eight 2-oz. sticks.

ENGLISH SLATE BORAX.

We import the material and guarantee it genuine.

No. G Per pound :.....\$0.40

BORUM CHUNK.

This material is used the same as Slate Borax. It holds the articles to be soldered without binding wire and it will not flux.

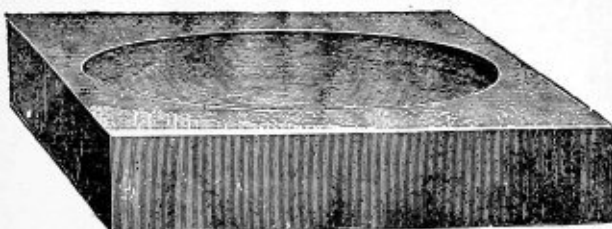
No. H Price per pound.....\$1.00

No. J Borax for melting, per pound..... .20

No. K Powdered Borax, per pound..... .15

Order by respective number and be sure to affix the page number also, viz.:
1 only No. B—544.

BORAX SLATE AND HOLDER.

BORAX
SLATE

No. 1.	3½" x 3½" Square.....	Dozen \$3.00	Each \$0.25
No. 2.	5" x 5" "	" 3.50	" .30



No. 3.

BORAX
HOLDER

\$4.00 Dozen

.35 Each



This Borax Holder consists of a ground glass saucer shaped dish, fitted into a wood block having a metal cover.

Always affix page number to the item number when ordering—viz.,
2 only No. 2—545.

LAFAYETTE SOLDERING FLUIDS.



The brand "Lafayette" is a guarantee of quality.

HARD SOLDERING FLUID.

Number.....	A	B	C	D	E	G	H
Size Bottle...1 oz.		4 oz.	8 oz.	1 pt.	1 qt.	½ gal. Can	1 gal. Can
Each	\$0.10	\$0.25	\$0.40	\$0.60	\$1.00	\$1.50	\$2.50
No. J One dozen 1 oz. bottles in a package.....							\$1.00

SOFT-SOLDERING FLUID.

Number.....	K	L	M	N	P	R	T
Size Bottle...1 oz.		4 oz.	8 oz.	1 pt.	1 qt.	½ gal. Can	1 gal. Can
Each	\$0.10	\$0.25	\$0.40	\$0.60	\$1.00	\$1.50	\$2.50
No. U One dozen 1 oz. bottles in a package.....							\$1.00

OXIDIZING FLUID.

Specially prepared for oxidizing metals.

No. V Per bottle.....\$3.00

ANTI-OXIDIZING FLUID.

The best polish preserver made.

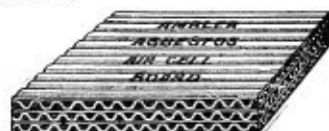
Number.....	1	2	3	4	5	6	7
Size Bottle...1 oz.		4 oz.	8 oz.	1 pt.	1 qt.	½ gal. Can	1 gal. Can
Each	\$0.10	\$0.25	\$0.40	\$0.60	\$1.00	\$1.50	\$2.50
No. 8 One dozen 1 oz. bottles in package.....							\$1.00

Please order every item by its respective number and be sure to affix page number. The safest, best and quickest way to write orders, viz.:

½ doz. No. L—546.

AMBLER AIR-CELL BOARD.

This Board makes one of the Best Soldering Blocks now on the Market.



Sheets are 36" x 36" Square.

Prices	No. A.	$\frac{1}{2}$ " thick	27c	per square foot
For Full	" B.	$\frac{3}{4}$ " "	27c	" " "
Sheets Only	" C.	1" "	30c	" " "

Weights per Sheet, $\frac{1}{2}$ ", 4 lbs.; $\frac{3}{4}$ ", 6 lbs.; 1", 8 lbs.

Size	Thick $\frac{1}{2}$ "	Thick $\frac{3}{4}$ "	Thick 1"
6" x 6" ... No. D.	Each \$0.20	No. L. Each \$0.25	No. T. Each \$0.30
" 8 x 8 ... " E.	.25	" M. " .30	" U. " .35
" 7 x 10 ... " G.	.30	" N. " .35	" V. " .40
" 10 x 10 ... " H.	.35	" P. " .40	" W. " .40
" 9 x 12 ... " J.	.35	" R. " .40	" X. " .45
" 12 x 12 ... " K.	.40	" S. " .45	" Y. " .50

CORRUGATED ASBESTOS SOLDERING BLOCKS.



This block is corrugated on one side and plain on the other. The corrugations allow the heat to pass around the work quickly, and render binding unnecessary, as the articles retain their position while being soldered.

No. 1.	6" x 2 $\frac{1}{2}$ "	\$ 2.50	Dozen	\$0.25	Each
" 2.	4 x 4	2.70	"	.27	"
" 3.	6 x 4	3.00	"	.30	"
" 4.	6 x 6	3.50	"	.35	"
" 5.	6 x 8	5.25	"	.52	"
" 6.	6 x 12	6.00	"	.60	"
" 7.	12 x 12	12.00	"	1.20	"

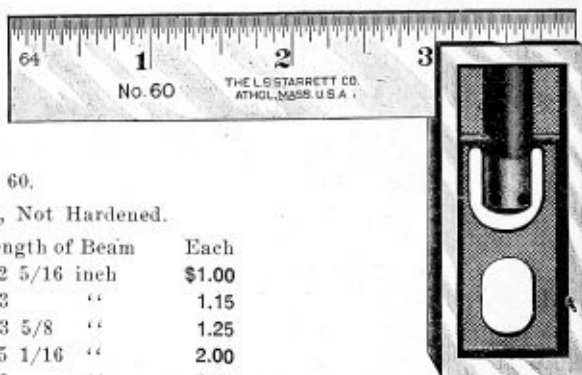
PLAIN ASBESTOS SOLDERING BLOCKS.

No. 8.	6" x 2 $\frac{1}{2}$ "	\$ 2.50	Dozen	\$0.25	Each
" 9.	6 x 6	3.50	"	.35	"
" 10.	6 x 8	5.25	"	.50	"
" 11.	7 x 10	6.50	"	.65	"
" 12.	10 x 10	7.75	"	.75	"
" 13.	9 x 12	10.00	"	1.00	"
" 14.	12 x 12	12.00	"	1.20	"
" 15.	10 x 15	13.50	"	1.35	"
" 16.	15 x 15	18.00	"	1.80	"
" 17.	18 x 18	21.00	"	2.10	"
" 18.	20 x 20	28.00	"	2.80	"
" 19.	24 x 24	40.00	"	4.00	"

Always order by respective number and be sure to affix the page number—viz., $\frac{1}{2}$ Doz. No. 12—547.

"RELIABLE" TRY SQUARES.

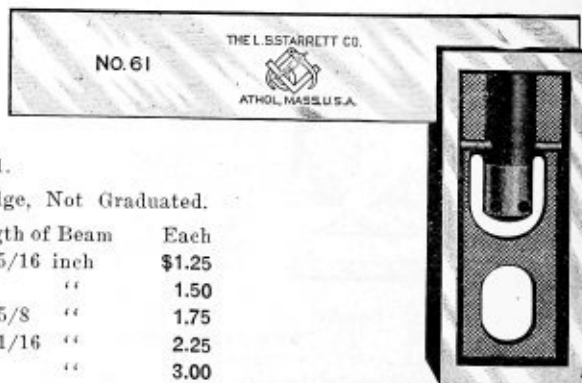
The following cuts represent a line of Try Squares, handsome in design, light and convenient. The blade is not riveted or soldered to the stock, but is firmly held by our patent bolt and nut, by means of which the tool can be readily taken apart, and when worn the blade and stock can be reground or lapped, and put together again as good as new.



No. 60.

Graduated Blade, Not Hardened.

	Length of Blade	Length of Beam	Each
A	4 inch	2 5/16 inch	\$1.00
B	5 "	3 "	1.15
C	6 "	3 5/8 "	1.25
D	9 "	5 1/16 "	2.00
E	12 "	6 "	2.75



No. 61.

Blade with Hardened Edge, Not Graduated.

	Length of Blade	Length of Beam	Each
G	4 inch	2 5/16 inch	\$1.25
H	5 "	3 "	1.50
J	6 "	3 5/8 "	1.75
K	9 "	5 1/16 "	2.25
L	12 "	6 "	3.00

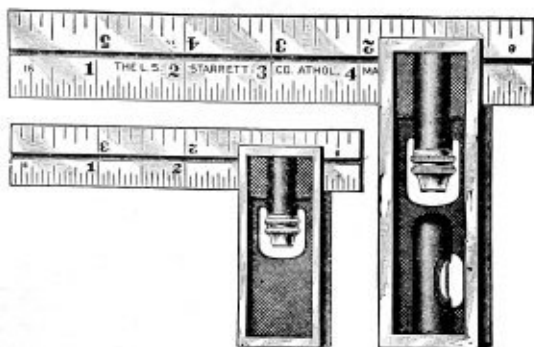
Write your order this way—viz.:

1 only No. 61-H—554.

PATENT DOUBLE SQUARE.

No. 13.

With Hardened Blade.



This square is conceded the most practical one for machinists' and fine tool makers' use ever offered. The sliding scale, shortened or extended full length, makes it more valuable than a full set of the common kind, while with the extra bevel blade, shown in the following cut, we have both the hexagon and octagon angles.

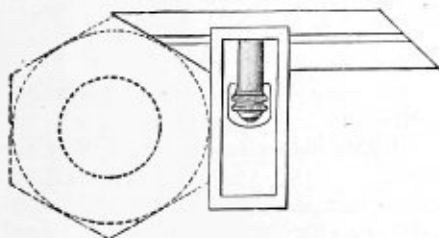
The seat against which the blade is clamped being convex, should corners of the blade get injured, the accuracy of the square is not affected.

Prices.

A.	4 inch.....	\$1.25, with both blades, \$1.65
B.	6 "	2.00, " " " 2.50
C.	9 "	3.00
D.	12 "	4.00

Both blades with 4 and 6 inch always sent unless otherwise ordered.

There is a level in the stocks of the 6 inch, 9 inch, and 12 inch squares.



The blades are graduated in No. 4, No. 1, No. 2, No. 7, and No. 16 graduations. Those of No. 4 graduation will be sent unless otherwise ordered.

This cut represents the 4 inch and 6 inch double square, with hexagon end of blade applied. Reverse it and the octagon is in position for use. Bevel blades are made to fit only 4 inch and 6 inch sizes.

Be sure to write your order this way—1 only No. 13-C—555.

SOLDERING SETS.



Set No. 1.....Dozen, \$9.00

This set has a self-heating copper that can be attached to a gas burner to be heated. This is a great convenience many times.



Set No. 2.....Dozen, \$6.00

This set has an ordinary copper that must be heated in a stove or flame.

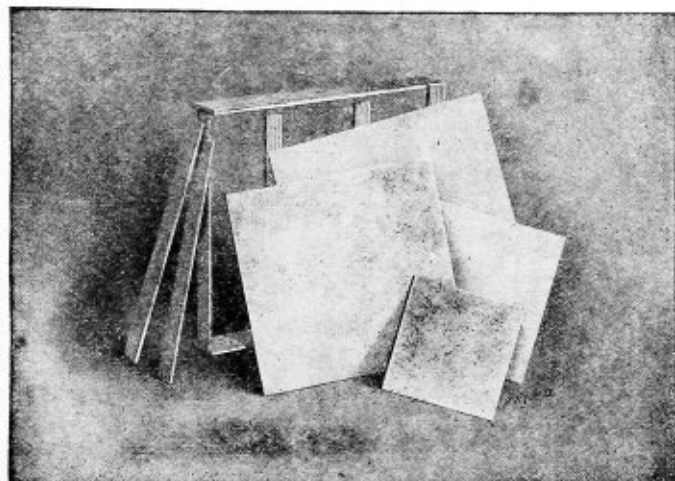
N.B.—The coppers supplied with the above sets are made of sufficient size to retain heat.

Do not confound the above sets with some others upon the market which are too small to be of service.

Always affix page number with the item number, viz.:
4 only No. 1—548.

ASBESTOS SHEET MILL BOARD.

Made From Pure Asbestos Fiber and is Fire- and Acid-Proof.
Standard Sheets 40 x 40 Inches.



Especially Adapted for Fire-proof Lining of Work Benches, Floors, Partitions, etc.

APPROXIMATE WEIGHTS AND THICKNESSES
OF FULL SIZED SHEETS, 40" x 40".

1/32 inch—2 pounds per sheet	3/16 inch—12 pounds per sheet
3/64 " —3 " " " "	1/4 " —14 " " " "
1/16 " —4 " " " "	3/8 " —23 " " " "
3/32 " —6 " " " "	1/2 " —27 " " " "
1/8 " —8 " " " "	

Made in three grades, hard, medium, and soft.

Medium furnished unless otherwise specified.

PRICES.

Standard sizes and thicknesses, per pound (full size sheets only)....\$0.20

When ordering specify exactly what is wanted and affix the page number (549). By so doing it avoids error.

SOLDERING COPPERS.

Drawn Copper Bolts, Forged.

Our Coppers are made of Drawn Copper Bolts of the best quality, and are shaped under a hammer; by this method they are as solid as the metal can be made. They should not be compared with such as are cast from copper ingots.

Numbers	.....	6	7	8	9	10	11	12	13	14	15
Each	.....	\$0.23	.35	.45	.57	.68	.90	1.13	1.35	1.58	1.80
Weight, pounds.		$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4

Weights

5½ oz.



No. 1.
12½" long
Each, \$0.30

3 oz.



No. 2.
11½" long
Each, \$0.25

1¾ oz.



No. 3.
10" long
Each, \$0.20

1 oz.



No. 4.
9" long
Each, \$0.15

¾ oz.



No. 5.
8¾" long
Each, \$0.10



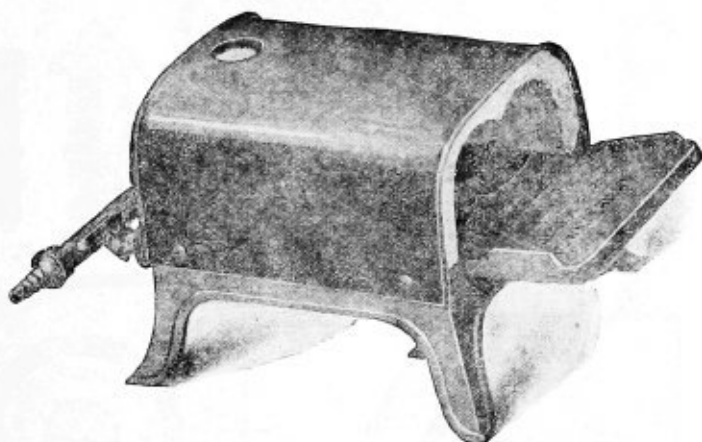
No. 16. Adjustable Copper, each, \$0.25



Self Heating Soldering Bit
For Illuminating Gas Only
Each, \$2.00

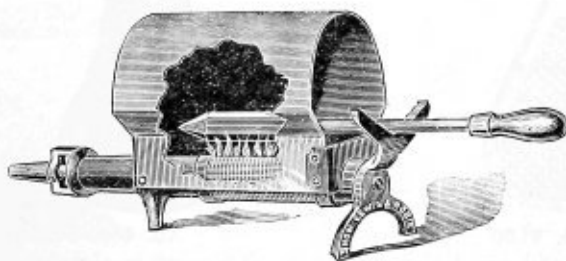
Order by respective number and be sure to affix the page number.

SOLDERING COPPER HEATERS.



This heater burns illuminating gas only.

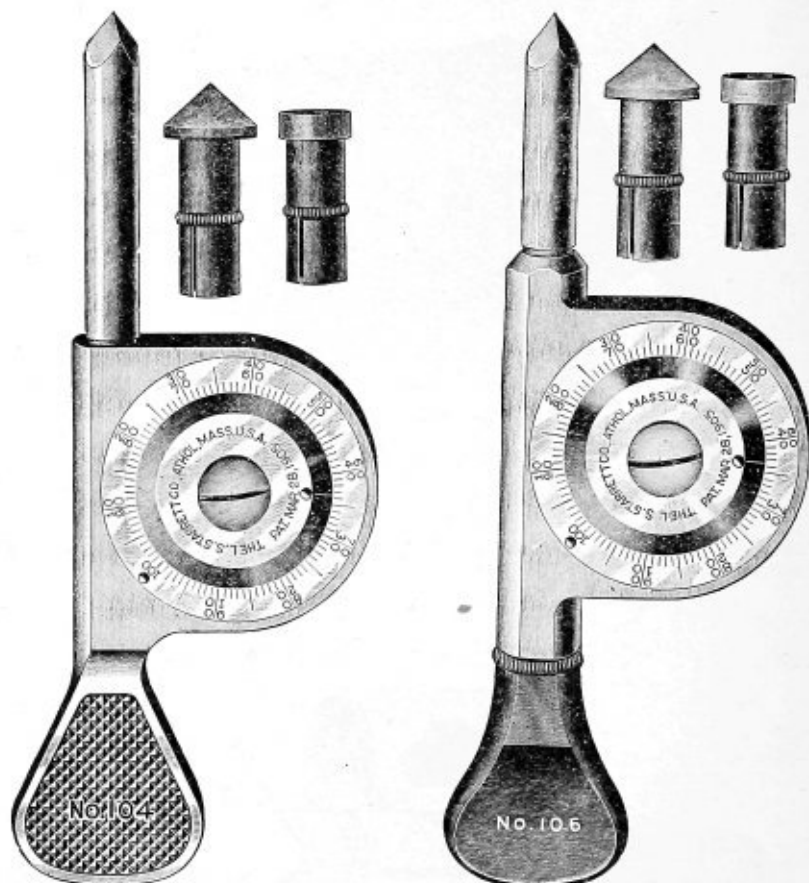
Size No. 1—For 1 copper only.....	\$3.00
“ “ 2—“ 2 coppers	4.00



No. 18B—For illuminating gas only.....	\$1.25
No. 3—For gasoline gas, with cap-nut regulator.....	1.45
No. 4—For gasoline gas, with wheel valve.....	2.00
No. 5—For natural gas.....	1.25

Note—When ordering from this book please use our new system. It's of great value and very simple, viz.: 1 only, No. 3—551.

STARRETT'S SPEED INDICATORS.
Every indicator is warranted first-class.



No. 104, \$1.00.

The case is metal throughout—nickel-plated.

The graduations show every revolution, and with two rows of figures read both right and left as the shaft may run.

RUBBER TIPS FOR POINTED AND HOLLOW CENTERS.

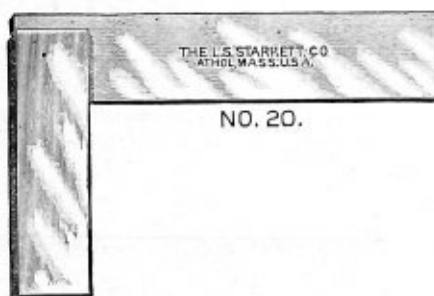
An important improvement which is now applied to the above Speed Indicators, without extra charge, consists in adding to the hardened steel pointed spindle, rubber tips for both pointed and centered shafts, which not only remove the jar and run smoothly, but produce a stronger frictional contact between the shaft and the instrument.

How to write order: 1 only, No. 104—552.

No. 106, \$1.50.

Instrument is nickel-plated, and has a rosewood handle.

HARDENED EDGE SOLID STEEL SQUARE.

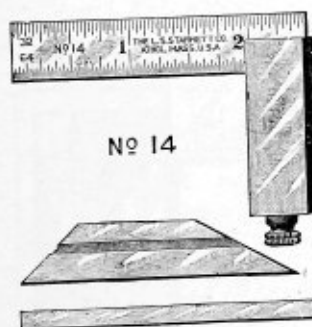


NO. 20.

A	1	inch	blade	inside	beam,	full	length	of	beam	1	inch	\$	1.50
B	1½	"	"	"	"	"	"	"	"	1½	"	1.75	
C	2	"	"	"	"	"	"	"	"	1¾	"	2.00	
D	3	"	"	"	"	"	"	"	"	2¾	"	2.50	
E	4½	"	"	"	"	"	"	"	"	3½	"	3.50	
G	6	"	"	"	"	"	"	"	"	4 5/16	"	4.50	
H	9	"	"	"	"	"	"	"	"	5 9/16	"	6.50	
J	12	"	"	"	"	"	"	"	"	7	"	9.00	
K	15	"	"	"	"	"	"	"	"	8 5/8	"	15.00	
L	18	"	"	"	"	"	"	"	"	10 1/2	"	18.00	
M	24	"	"	"	"	"	"	"	"	12 5/16	"	25.00	

DOUBLE STEEL SQUARES.

With Hardened Head and
Blades.



No 14

This cut represents a double solid steel square, with our patent 2½-inch sliding scale, and is especially designed for fine tool makers. The rule being narrow and instantly adjusted to any length, however short, allows it to be used where it would be impossible to use any square with a fixed blade. The scale is graduated on one side only, in 32ds and 64ths.

Fitted to go with this stock, we make not only a bevel blade, but a very narrow straight one, about ¼ inch wide, highly prized by die makers for squaring small holes, both of which blades will be sent with the square unless otherwise ordered.

No. 14 A	Square	\$2.00
No. 14 B	" with either bevel or narrow blade	2.30
No. 14 C	" complete	2.60

Sent complete (No. 14 C) unless otherwise ordered.

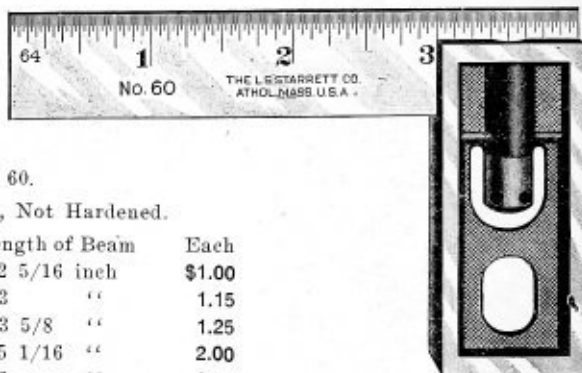
No. 14 M With 5 cm. blade, graduated in millimeters and ½ millimeters, otherwise the same as No. 14. Prices the same as for No. 14.

Be sure to write your order this way, viz.:

1 only No. 20D—553.

"RELIABLE" TRY SQUARES.

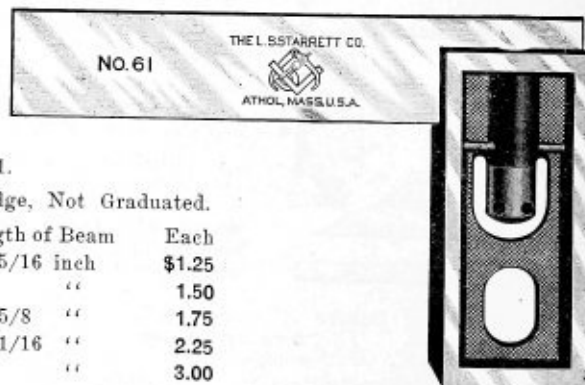
The following cuts represent a line of Try Squares, handsome in design, light and convenient. The blade is not riveted or soldered to the stock, but is firmly held by our patent bolt and nut, by means of which the tool can be readily taken apart, and when worn the blade and stock can be reground or lapped, and put together again as good as new.



No. 60.

Graduated Blade, Not Hardened.

	Length of Blade	Length of Beam	Each
A	4 inch	2 5/16 inch	\$1.00
B	5 "	3 "	1.15
C	6 "	3 5/8 "	1.25
D	9 "	5 1/16 "	2.00
E	12 "	6 "	2.75



No. 61.

Blade with Hardened Edge, Not Graduated.

	Length of Blade	Length of Beam	Each
G	4 inch	2 5/16 inch	\$1.25
H	5 "	3 "	1.50
J	6 "	3 5/8 "	1.75
K	9 "	5 1/16 "	2.25
L	12 "	6 "	3.00

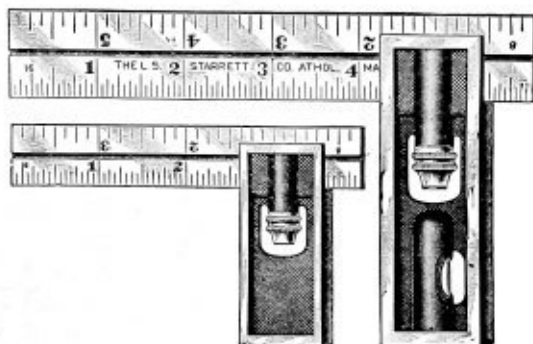
Write your order this way—viz.:

1 only No. 61-H—554.

PATENT DOUBLE SQUARE.

No. 13.

With Hardened Blade.



This square is conceded the most practical one for machinists' and fine tool makers' use ever offered. The sliding scale, shortened or extended full length, makes it more valuable than a full set of the common kind, while with the extra bevel blade, shown in the following cut, we have both the hexagon and octagon angles.

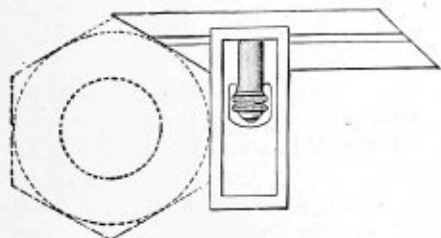
The seat against which the blade is clamped being convex, should corners of the blade get injured, the accuracy of the square is not affected.

Prices.

A.	4 inch.....	\$1.25,	with both blades,	\$1.65
B.	6 ".....	2.00,	" " "	2.50
C.	9 ".....	3.00		
D.	12 ".....	4.00		

Both blades with 4 and 6 inch always sent unless otherwise ordered.

There is a level in the stocks of the 6 inch, 9 inch, and 12 inch squares.



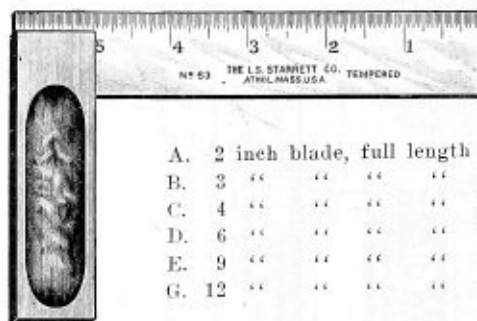
The blades are graduated in No. 4, No. 1, No. 2, No. 7, and No. 16 graduations. Those of No. 4 graduation will be sent unless otherwise ordered.

This cut represents the 4 inch and 6 inch double square, with hexagon end of blade applied. Reverse it and the octagon is in position for use. Bevel blades are made to fit only 4 inch and 6 inch sizes.

Be sure to write your order this way—1 only No. 13-C—555.

GRADUATED HARDENED STEEL SQUARES.

No. 63.

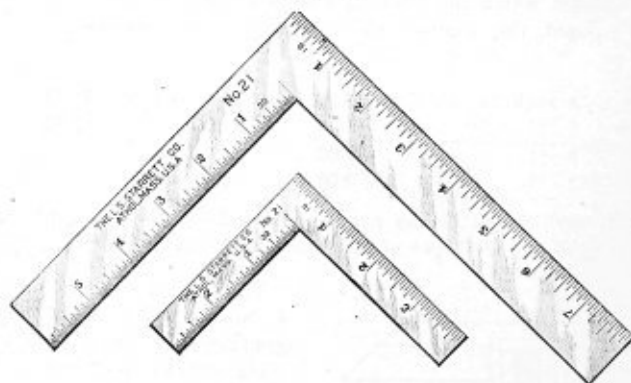


A.	2 inch blade, full length of beam	1 1/2 inch	.....	\$1.50
B.	3 " " " " " " " "	2 " "	.....	2.00
C.	4 " " " " " " " "	2 3/4 " "	.....	2.50
D.	6 " " " " " " " "	3 3/4 " "	.....	3.50
E.	9 " " " " " " " "	5 " "	.....	5.50
G.	12 " " " " " " " "	6 1/2 " "	.....	6.50

The above cut represents our newly designed, hardened, solid steel try square. This square has concave depressions in each side of the stock, which not only reduce its weight but make it more convenient to hold between the thumb and finger while being used. The stocks are case-hardened, the blades hardened to spring-temper and graduated in 32ds of an inch on one side and 64ths on the other.

THIN STEEL TRY SQUARES.

No. 21.

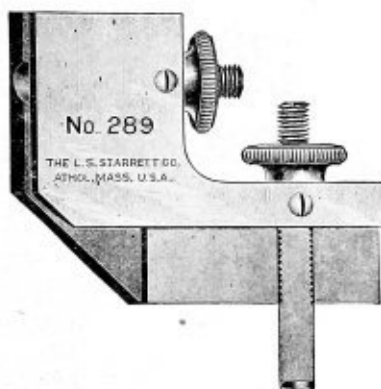


H.	2 x 1 inch, 1/20 inch thick, grad.	16ths, 64ths one side; 32ds, 64ths other	\$1.00
J.	3 x 2 " " 1/20 " " " "	16ths, 64ths " " 32ds, 64ths " "	1.50
K.	4 x 3 " " 1/16 " " " "	16ths and 32ds both sides	2.00
L.	6 x 4 " " 1/16 " " " "	" " " " " " " "	3.00
M.	8 x 6 " " 1/16 " " " "	" " " " " " " "	4.00
N.	10 x 8 " " 1/16 " " " "	" " " " " " " "	5.00
P.	12 x 8 " " 3/32 " " " "	" " " " " " " "	6.00

Write your order—viz., 1 only No. 63-C—556.

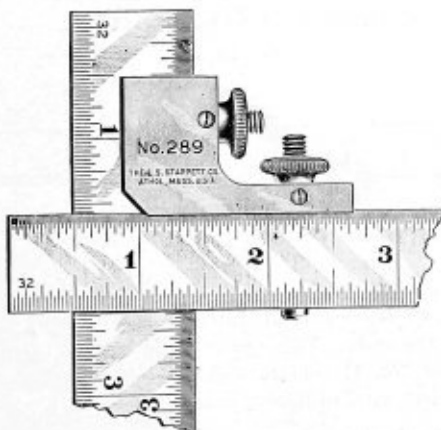
ATTACHMENT FOR COMBINATION SQUARES.

No. 289.



No. 289. Price each, 75c

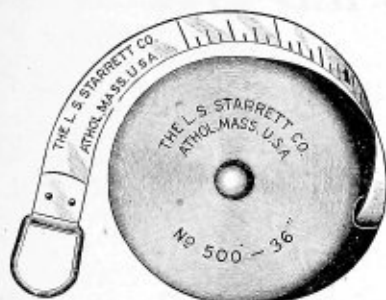
The use of this attachment is so well shown by the illustrations that a further description is hardly necessary. The attachment is made to fit the 12, 18 and 24 inch blades of our Nos. 11, 23 and 33 Squares, and can be used in connection with any of our regular rules as wide as one inch, or with our flat steel Square No. 21 for laying out key seats, etc.



Do not forget our new system for writing orders. The first number (289) tells the item wanted; the second number (557) gives the page the item is to be found on—viz.:

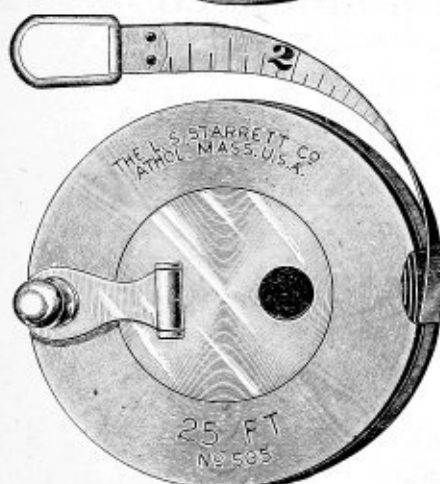
1 only 289—557.

STEEL MEASURING TAPES.



These tapes are $\frac{1}{4}$ inch wide, in well finished nickel-plated cases, with rounded edges. Spring wind with center stop. Graduated in inches and sixteenths of an inch.

No.	Each
A. 36 in., in case 1 $\frac{1}{4}$ in. Diam.	\$0.60
B. 60 " " " 1 $\frac{5}{8}$ " "	.75
C. 72 " " " 1 $\frac{11}{16}$ " "	.80
D. 96 " " " 1 $\frac{13}{16}$ " "	1.15



These tapes are $\frac{3}{8}$ inch wide, in strong and well finished nickel-plated steel cases, with folding flush winders.

No. 505 Tapes are graduated in feet and twelfths of a foot, also in inches and eighths of an inch.

No. 506 Tapes are graduated in feet, tenths and hundredths of a foot.

No.	Each
E. 25 ft., in case 2 $\frac{3}{4}$ in. Diam.	\$2.75
G. 50 " " " 3 $\frac{1}{4}$ " "	3.40
H. 75 " " " 3 $\frac{3}{4}$ " "	4.50
J. 100 " " " 4 $\frac{1}{4}$ " "	5.75



These tapes are $\frac{1}{4}$ inch wide, in hard leather cases, flush handle, nickel-plated trimmings.

No. 512 Tapes are graduated in feet and twelfths of a foot, also in inches and sixteenths of an inch.

No. 513 Tapes are graduated in feet, tenths and hundredths of a foot.

These tapes weigh only a few ounces (25 feet weighing three ounces) and can be easily carried in the vest pocket.

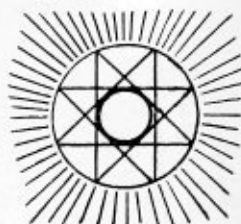
No.	Each
K. 25 ft., in case 2 $\frac{1}{4}$ in., Diam.	\$3.00
L. 33 " " " 2 $\frac{1}{2}$ " "	3.25
M. 50 " " " 2 $\frac{3}{4}$ " "	3.50
N. 66 " " " 3 " "	4.00

Write your order thus: 1 only 512-K—559.

DIAMOND CRUSHED STEEL



A SCIENTIFIC ARTIFICIAL
ABRASIVE
A STEEL DIAMOND



Manufacturers and Sole Patentees

PITTSBURG CRUSHED STEEL CO.

PITTSBURG, PA., U. S. A.

SOLE DISTRIBUTERS:

American Oil and Supply Co.

NEWARK, N. J., U. S. A.

Made in No. 50, No. 70 and No. 90 Grain.

BEST ABRASIVE KNOWN. WHY?

Diamond Crushed Steel is an artificial abrasive made from high grade crucible steel, and through its manufacture and handling receives the particular temper of hardness necessary for the work that it performs. This you will notice differs from any other abrasive, whether natural or artificial.

NEVER BREAKS DOWN.

All other abrasives, whether natural or artificial, easily become inert when in use, as they cannot withstand the abuse they are put to, they break down and from coarse cutting sizes becomes smaller and smaller, and this means that it takes considerable more of the artificial or natural abrasives to perform a given amount of work than Diamond Crushed Steel.

QUICKER WORK—LESS EXPENSE.

One pound of Diamond Crushed Steel will do more work and do it quicker than five pounds of ordinary emery.

MORE UNIFORM RESULTS.

A great difference will be found in the working of Diamond Crushed Steel in comparison with the other abrasives. If an Optician wishes to grind a lens and starts with No. 80 Turkish Emery, Corundum or Carborundum, before he gets through he breaks that size material

See Opposite Page.

down to an impalpable powder and during the time that he is doing this he changes the surface of the lens from a coarse ground surface to a finely ground surface.

He can not get these results with the Diamond Crushed Steel; if he starts to use No. 90 he will get a No. 90 surface, as he can not by any method break the grains down to give him the surface that No. 90 of the other abrasives give. Hence it is very easily seen why it takes such a small quantity of the Diamond Crushed Steel to do a certain amount of work.

POWER SAVED.

Considerable less power is used in grinding with Diamond Crushed Steel than with the other abrasives, as at least 50 per cent. of the power used with the other abrasives is lost by breaking down the grinding materials that the operator is using.

NO WASTE.

Diamond Crushed Steel can be used over and over and over innumerable times and always is performing its duty as long as a grain of it is left.

DIRECTIONS FOR USE.

Diamond Crushed Steel is used in the same manner as Turkish Emery, Corundum or Carborundum, but special care should be exercised in its use on account of the grains of the Diamond Crushed Steel being so much smaller than the other abrasives heretofore used.

Oil or water should be applied sparingly to prevent the small grains being drowned or floated away. On account of Diamond Crushed Steel resisting pulverization the material can be used over and over innumerable times.

To prevent the material from oxidizing keep it always submerged under water, or when in a dampened condition sprinkle it with a little slacked lime.

We recommend using five to ten meshes finer in size of the Diamond Crushed Steel than in the ordinary Abrasives.

PRICE LIST—ALL NUMBERS. 50, 70 or 90.

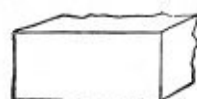
100 pound bags	15c per lb.
25 " "	15c " "
10 " "	18c " "
5 " "	22c " "
Smaller quantities	25c " "

Terms: Thirty days net, or less 1 per cent ten days from date of invoice, F. O. B. Newark.

All goods will be shipped by express unless otherwise ordered.

TOOL STEEL. STRICTLY FIRST QUALITY. NATURAL BLACK FINISH.

FLAT BARS.



Furnished in 1
foot or 3 foot
lengths.

Dimensions and prices per pound.

Thickness	Width										Per lb.
1/16 x 1/4	5/16	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	\$0.60
1/8 x 1/4	5/16	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	.50
3/16 x 5/16	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4		.50
1/4 x 5/16	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4		.35
5/16 x 3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4			.35
3/8 x 1/2	9/16	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4			.35
7/16 x 3/8	1	1 1/4									.35
1/2 x 3/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2				.35
5/8 x 3/4	7/8	1	1 1/4								.35
3/4 x 1	1 1/4	1 1/2									.35



Sizes of Square
Bars
in inches.

{	1/8	5/32	3/16	7/32	1/4	9/32	5/16	3/8	7/16	1/2
	9/16	5/8	11/16	3/4	13/16	7/8	1	1 1/8	1 1/4	1 1/2



Diam. of Round
Bars.

{	3/16	7/32	1/4	9/32	5/16	3/8	7/16	1/2	9/16	5/8
	11/16	3/4	13/16	7/8	15/16	1	1 1/8	1 1/4	1 3/8	1 1/2

Prices
per pound.

{	1/8"	5/32"	3/16"	7/32"	1/4"
	\$0.60	\$0.55	\$0.50	\$0.45	\$0.40

5/16" and larger, \$0.35 per lb.

TABLES OF WEIGHTS IN POUNDS OF A LINEAL FOOT.

Size in inches	Round	Octgn.	Square	FLAT BARS.						
				Wdth. inch.	—Thickness—					
					$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$
1/16	.010	.011	.013							
$\frac{1}{8}$	.042	.044	.053							
3/16	.094	.099	.120	$\frac{1}{2}$	.214	.428	.641	.....	.....	.....
$\frac{1}{4}$	.168	.177	.214	$\frac{5}{8}$	.267	.534	.802	1.069	.....	.....
5/16	.262	.277	.334	$\frac{3}{4}$	.321	.641	.962	1.283	1.603	.....
$\frac{3}{8}$	.378	.398	.491	$\frac{7}{8}$	.374	.748	1.122	1.496	1.870	2.244
7/16	.514	.542	.655	1	.427	.855	1.283	1.710	2.138	2.565
$\frac{1}{2}$	.671	.708	.855	1 $\frac{1}{8}$	.481	.962	1.443	1.924	2.405	2.886
9/16	.850	.896	1.082	1 $\frac{1}{4}$	.534	1.069	1.603	2.138	2.672	3.206
$\frac{5}{8}$	1.049	1.107	1.336	1 $\frac{3}{8}$	.588	1.176	1.763	2.351	2.939	3.527
11/16	1.270	1.339	1.616	1 $\frac{1}{2}$	.641	1.283	1.924	2.565	3.206	3.848
$\frac{3}{4}$	1.511	1.594	1.924	1 $\frac{5}{8}$	.695	1.389	2.084	2.779	3.473	4.168
13/16	1.773	1.870	2.258	1 $\frac{3}{4}$	.748	1.496	2.244	2.993	3.741	4.489
$\frac{7}{8}$	2.056	2.169	2.618	1 $\frac{7}{8}$	.802	1.603	2.405	3.206	4.008	4.809
15/16	2.361	2.490	3.006	2	.855	1.710	2.565	3.420	4.275	5.130
1	2.686	2.833	3.420	2 $\frac{1}{8}$	.908	1.817	2.725	3.634	4.542	5.451
1 $\frac{1}{8}$	3.399	3.585	4.328	2 $\frac{1}{4}$	.962	1.924	2.886	3.848	4.809	5.771
1 $\frac{1}{4}$	4.197	4.427	5.344	2 $\frac{3}{8}$	1.015	2.031	3.046	4.061	5.077	6.092
1 $\frac{3}{8}$	5.078	5.356	6.466	2 $\frac{1}{2}$	1.069	2.138	3.206	4.275	5.344	6.413
1 $\frac{1}{2}$	6.044	6.374	7.695	2 $\frac{5}{8}$	1.122	2.244	3.367	4.489	5.611	6.733
1 $\frac{5}{8}$	7.093	7.481	9.031	2 $\frac{3}{4}$	1.176	2.351	3.527	4.703	5.878	7.054
1 $\frac{3}{4}$	8.226	8.674	10.474	3	1.283	2.565	3.848	5.130	6.413	7.695
1 $\frac{7}{8}$	9.443	9.960	12.023	3 $\frac{1}{4}$	1.389	2.779	4.168	5.558	6.947	8.336
2	10.744	11.332	13.680	3 $\frac{1}{2}$	1.496	2.993	4.489	5.985	7.481	8.978

KIDD SPECIAL DRILL RODS.

For Making Twist Drills, Taps, Reamers, Punches, Small Tools, etc.

Size	Decimals	Pound	Size	Decimals	Pound	Size	Decimals	Pound
3/4	0.750	\$0 55	G	0.261	\$0 75	36	0.106	\$0 90
47/64	0.7343	55	F	0.257	75	37	0.103	90
23/32	0.7187	55	E	0.250	75	38	0.101	90
45/64	0.703	55	1/4	0.250	75	39	0.099	1 05
11/16	0.6875	55	D	0.246	75	40	0.097	1 05
43/64	0.6718	55	C	0.242	75	41	0.095	1 05
21/32	0.6562	55	B	0.238	75	3/32	0.0937	1 05
41/64	0.6406	55	15/64	0.2343	75	42	0.092	1 05
5/8	0.625	55	A	0.234	75	43	0.088	1 05
39/64	0.6093	55	1	0.227	75	44	0.085	1 05
19/32	0.5937	55	2	0.219	75	45	0.081	1 05
37/64	0.578	55	7/32	0.2187	75	46	0.079	1 05
9/16	0.5625	55	3	0.212	75	5/64	0.0781	1 20
35/64	0.5468	55	4	0.207	75	47	0.077	1 20
17/32	0.5312	55	5	0.204	75	48	0.075	1 20
33/64	0.5156	55	13/64	0.2031	75	49	0.072	1 20
1/2	0.500	60	6	0.201	75	50	0.069	1 20
31/64	0.4843	60	7	0.199	75	51	0.066	1 45
15/32	0.4687	60	8	0.197	75	52	0.063	1 45
29/64	0.4531	60	9	0.194	75	1/16	0.0625	1 45
7/16	0.4375	60	10	0.191	75	53	0.058	1 45
27/64	0.4218	75	11	0.188	75	54	0.055	1 45
Z	0.413	75	3/16	0.1875	75	55	0.050	1 80
13/32	0.4062	75	12	0.185	75	3/64	0.0468	1 80
Y	0.404	75	13	0.182	75	56	0.045	1 80
X	0.397	75	14	0.180	75	57	0.042	1 80
25/64	0.3906	75	15	0.178	75	58	0.041	2 10
W	0.386	75	16	0.175	83	59	0.040	2 10
V	0.377	75	17	0.172	83	60	0.039	2 10
3/8	0.375	75	11/64	0.1718	83	61	0.038	2 40
U	0.368	75	18	0.168	83	62	0.037	2 40
23/64	0.3593	75	19	0.164	83	63	0.036	2 70
T	0.358	75	20	0.161	83	64	0.035	2 70
S	0.348	75	21	0.157	83	65	0.033	2 70
11/32	0.3437	75	5/32	0.1562	83	66	0.032	3 00
R	0.339	75	22	0.155	83	1/32	0.0312	3 00
Q	0.332	75	23	0.153	83	67	0.031	3 00
21/64	0.3281	75	24	0.151	83	68	0.030	3 00
P	0.323	75	25	0.148	83	69	0.029	3 30
O	0.316	75	26	0.146	83	70	0.027	3 30
5/16	0.3125	75	27	0.143	83	71	0.026	3 60
N	0.302	75	28	0.139	83	72	0.024	3 60
19/64	0.2968	75	29	0.134	83	73	0.023	3 60
M	0.295	75	9/64	0.1406	83	74	0.022	3 90
L	0.290	75	30	0.127	83	75	0.020	4 05
9/32	0.2812	75	1/8	0.125	83	76	0.018	4 20
K	0.281	75	31	0.120	90	77	0.016	4 50
J	0.277	75	32	0.115	90	1/64	0.0156	4 50
I	0.272	75	33	0.112	90	78	0.015	4 80
H	0.266	75	34	0.110	90	79	0.014	5 10
17/64	0.2656	75	7/64	0.1093	90	80	0.013	5 40
			35	0.108	90			

We can supply Genuine Stubbs Drill Rod. Specify same if wanted.

SCOTCH OR WATER-OF-AYR STONE.

For jewelers and watch case manufacturers. 6" long, square slips.



Number	A	B	C	D	E	G
Size	1/8"	3/16"	1/4"	5/16"	3/8"	1/2"
Per gross	\$2.50	\$2.50	\$2.75	\$3.00	\$3.00	\$3.50
Per dozen .....	.25	.25	.30	.35	.35	.40
Number	H	J	K	L	M	
Size	5/8"	3/4"	7/8"	1"	1 1/4"	
Per gross	\$4.00	\$4.50	\$5.00	\$5.50	\$10.00	
Per dozen .....	.45	.50	.55	.60	1.00	

RAG STONE SLIPS.

These are put up into packages containing 2 ounces of assorted pieces.

Price, per package.....\$0.75

Rag Stones are used by Die Sinkers for cutting and polishing steel dies. Silversmiths will find Rag Stones very helpful.

APPROXIMATE WEIGHTS OF GRINDSTONES.

All stones over 200 pounds are sold by measurement weight, less than 200 pounds by cut weight, which is actual weight, on scales as they come from the lathe and is always cut on the stone.

Estimated Weight of Stone 155 Pounds per Cubic Foot.

—Diameter—		Weight of	—Diameter—		Weight of	—Diameter—		Weight of
Feet	inches	stone	Feet	inches	stone	Feet	inches	stone
	1 in. thick			1 in. thick			1 in. thick	
2	0	40.32	3	0	90.72	4	0	161.28
2	1	43.75	3	1	95.83	4	1	168.07
2	2	47.32	3	2	101.08	4	2	175.00
2	3	51.03	3	3	106.47	4	3	182.07
2	4	54.88	3	4	112.00	4	4	189.28
2	5	58.87	3	5	117.67	4	5	196.63
2	6	63.00	3	6	123.48	4	6	204.12
2	7	67.27	3	7	129.43	4	7	211.75
2	8	71.68	3	8	135.52	4	8	219.52
2	9	76.23	3	9	141.75	4	9	227.43
2	10	80.92	3	10	148.12	4	10	235.48
2	11	85.75	3	11	154.63	4	11	243.67

STEEL STRAIGHT EDGES.

No. 380. Plain—Not Hardened—Made in Pairs.

Prices given are for single straight edges.



Ins. long	Ins. wide	Ins. thick	Each
12	1	3/16	\$1.20
18	1 1/4	3/16	1.80
24	1 1/2	3/16	2.40
36	2	1/4	5.00
48	2 1/2	1/4	8.00
60	3	1/4	12.00

No. 383. Same Widths and Thicknesses as No. 380. Graduated on One Side Only, One Edge in 16ths and the Other in 8ths of an inch.



Ins. long	Each
12 in. long	\$1.80
18 "	2.50
24 "	3.25
36 "	6.25
48 "	10.00

No. 382. HARDENED.

These straight edges are accurately ground and hardened on the edges and are guaranteed to be correct.



Lgth.	Width.	App. thick-ness	Each
1 3/8	13/32	3/64	\$0.40
2 1/16	17/32	1/16	.45
2 5/8	5/8	1/16	.50
3 3/4	3/4	1/16	.60
5 1/2	1 1/4	5/64	1.00
7 1/4	1 5/16	5/64	1.25
10 1/2	1 11/16	5/64	2.00
13 5/8	2	5/64	2.75

No. 385. NOT HARDENED.

One edge only is beveled, and this to 1/16 inch thick from 1/2 to 5/8 inch back.



Ins. long	Ins. wide	Ins. thick	Each
12	1	3/16	\$1.50
18	1 1/4	3/16	2.50
24	1 1/2	3/16	3.50
36	2	1/4	6.00
48	2 1/2	1/4	10.00

No. 387. NOT HARDENED.

Same widths and thicknesses as No. 385. Graduated on beveled edge only in 32ds of an inch.



Ins. long	Each
12 in. long	\$2.00
18 "	3.00
24 "	4.25
36 "	7.25
48 "	12.00

HAND TAPS WITH "V"-THREADS.

IT'S WORTH READING. { An interesting article on the Proposed Elimination of the V-Thread in Taps and Dies appeared in the American Machinist, Feb. 25, 1909.

Diam. of Tap	No. of threads to inch		Price each	Price per set of 3
	Regular V stdrd.	Other V threads also furnished		
1/16	72	60, 64	\$0.35	\$1.05
5/64	72	56, 60, 64	.35	1.05
3/32	56	48, 50, 54, 60	.35	1.05
7/64	56	48	.35	1.05
1/8	40	32, 36, 48, 50	.35	1.05
9/64	40	32, 36	.35	1.05
5/32	32	30, 36, 40	.35	1.05
11/64	32	36	.35	1.05
3/16	24	30, 32, 36	.35	1.05
13/64	24	32	.35	1.05
7/32	24	32	.35	1.05
15/64	24	32	.35	1.05

STYLE No. 101.



TAPER.



PLUG.



BOTTOMING.

Order Taps with care. Avoid error.

Standard Size	Rough Iron Size	Diameter		No. of Treads to Inch		Price	
		Regular V Standard	Other V Threads also furnished	Price Each	Price Per Set of 3		
3/16		24	30, 32, 36	\$0.35	\$1.05		
	13/64	24	32	.35	1.05		
	7/32	24	32	.35	1.05		
1/4		20	24, 27, 32	.45	1.35		
	17/64	20	24, 27, 32	.45	1.35		
	9/32	20	24, 27, 32	.45	1.35		
5/16		18	20, 24, 27, 32	.50	1.50		
	21/64	18	20, 24, 27, 32	.50	1.50		
	11/32	18	20, 24, 27, 32	.50	1.50		
3/8		16	14, 18, 20, 24, 27	.55	1.65		
	25/64	16	14, 18, 20, 24, 27	.55	1.65		
	13/32	16	14, 18, 20, 24, 27	.55	1.65		
7/16		14	12, 16, 20, 24, 27	.60	1.80		
	29/64	14	12, 16, 20, 24, 27	.60	1.80		
	15/32	14	12, 16, 20, 24, 27	.60	1.80		

SPECIFY EVERY DETAIL WHEN
ORDERING.

All sizes and threads not listed will be considered special and subject to special prices.

Hand Taps with left-hand threads in sizes under 1/4 inch are special.

STYLE No. 103.



Taper.



Plug.



Bottoming.

TAPS AND DIES. Decimal Sizes With Fine Threads.

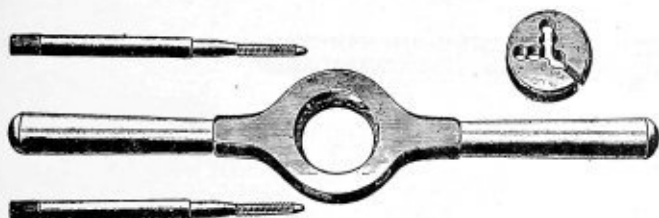


ILLUSTRATION
REPRESENTS
A TAP DIE
AND HOLDER

"TAPS" CUTTING DIAMETERS						Threads	"DIES" CUTTING DIAMETERS					
						Per						
.100"	.080"	.070"	.060"	.050"	.040"	Inch	.040"	.050"	.060"	.070"	.080"	.100"
No.62	No.50	No.38	No.26	No.14	No.2	40	No.1	No.13	No.25	No.37	No.49	No.61
" 64	" 52	" 40	" 28	" 16	" 4	50	" 3	" 15	" 27	" 39	" 51	" 63
" 66	" 54	" 42	" 30	" 18	" 6	60	" 5	" 17	" 29	" 41	" 53	" 65
" 68	" 56	" 44	" 32	" 20	" 8	70	" 7	" 19	" 31	" 43	" 55	" 67
" 70	" 58	" 46	" 34	" 22	" 10	80	" 9	" 21	" 33	" 45	" 57	" 69
" 72	" 60	" 48	" 36	" 24	" 12	100	" 11	" 23	" 35	" 47	" 59	" 71

ORDER BY RESPECTIVE NUMBER AND AVOID ERROR.

Taps, any size.....	\$0.40 each
Dies, " " .....	.50 "
No. 73—Holder for Dies....	.50 "

EAR WIRE SCREW PLATE SET.

As per above illustrations.

This Set consists of two Taps, one Die and Holder for same.
The threads are 60 and 80 per inch.

The cutting diameters are .040", .060" and .080".

Specify exactly cutting diameter and thread wanted.

No. 74. Complete Set.....\$1.50

ADJUSTABLE (IMPORTED) SCREW PLATE.



No. 75. With 4 Taps, complete, \$1.00
For Cutting Ear Wires

AMERICAN ADJUSTABLE SCREW PLATE.

This plate is the same style as No. 75 but a very superior article.

No. 76. Price, \$1.75

Always order by respective number and be sure to affix the page number—a very simple way in ordering and a sure way to avoid error—viz., 1 only No. 32—567 means 1 only Tap .060" diam. with 70 threads as listed on page 567.

MACHINE SCREW TAPS AND DIES. No. 112.



V-THREADS

Less than six of a size and thread will be charged as single Taps.

These Taps furnished in sets of taper, plug and bottoming, when desired, at regular prices.

All sizes and threads not listed will be considered special and subject to special prices.

Left-Hand Machine Screw Taps are special.

Size of Screw Gauge	Standard No. of Threads	Other Threads Furnished	Price of Taps Each Per Doz.	
No. 0	80	56, 60, 64	\$0.35	\$4.00
1	72	56, 60, 64	.35	4.00
1½	56	56	.35	4.00
2	56	48, 64	.35	4.00
3	48	40, 56	.35	4.00
4	36	32, 40, 42, 48	.35	4.00
5	36	32, 40, 44	.35	4.00
6	32	30, 36, 38, 40, 48	.35	4.00
7	32	30, 36, 40	.35	4.00
8	32	30, 36, 40	.35	4.00
9	30	28, 32	.35	4.00
10	24	28, 30, 32, 36	.35	4.00
11	24	28, 30	.35	4.00
12	24	20, 28, 32	.35	4.00
13	22	20, 24, 32	.38	4.40
14	20	18, 24	.38	4.40
15	20	18, 24	.38	4.40
16	18	16, 20, 22	.38	4.40
18	18	16, 20	.38	4.40
20	16	18, 20	.45	5.30
22	16	18	.45	5.30
24	16	14, 18	.45	5.30
26	16	14	.53	6.30
28	14	16	.53	6.30
30	14	16	.53	6.30

ROUND DIES.

5/8" Diam.

All Sizes

No. 0 to 14

40c Each

13/16" Diam.

All Sizes

No. 0 to 20

40c Each

1 inch Diam.

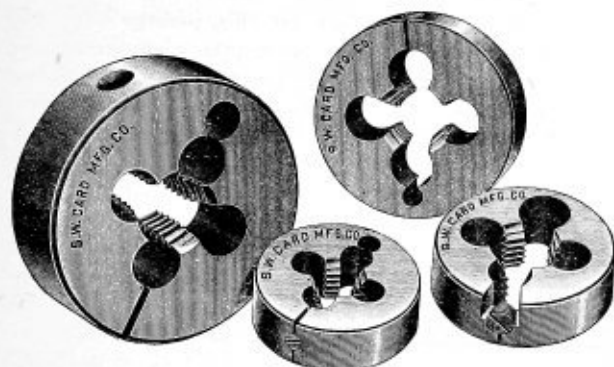
All Sizes

No. 4 to 30

75c Each

Note.—Use care in writing orders for Taps and Dies. Be sure to specify every detail.

ROUND ADJUSTABLE DIES, "V" THREADS.



WE SUPPLY ONLY
THE STANDARD
"V" THREAD UN-
LESS THE U. S.
ST'D IS CALLED
FOR.

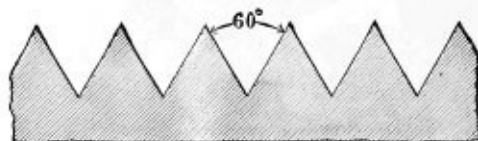
Sizes and threads not given in lists will be considered special and subject to special prices.

DIES $\frac{5}{8}$ " DIAMETER	{ Cutting all Machine Screw Sizes 0 to 14 " " Fractional " $\frac{1}{16}$ " " $\frac{17}{64}$ " }	40c Each
DIES $\frac{13}{16}$ " DIAMETER	{ Cutting all Machine Screw Sizes 1 to 20 " " Fractional " $\frac{1}{16}$ " " $\frac{5}{16}$ " }	40c Each
DIES 1" DIAMETER	{ Cutting all Machine Screw Sizes 4 to 30 " " Fractional " $\frac{1}{8}$ " " $\frac{1}{2}$ " }	75c Each
DIES $1 \frac{3}{16}$ " DIAMETER	{ Cutting all Fractional Sizes $\frac{3}{16}$ " to $\frac{1}{2}$ " }	\$1.00 Each
DIES $1 \frac{9}{16}$ " DIAMETER	{ Cutting all Fractional Sizes $\frac{1}{4}$ " to $\frac{5}{8}$ " }	\$1.25 Each

. Left-hand Threads are Special. Made to order only. Price upon request.

"U. S. ST'D" THREADS VS. "V" STANDARD.**Proposed Elimination of the Old V-Thread in Taps and Dies.**

For a number of years the tap and die makers of this country have had under consideration the advisability of discontinuing the regular manufacture for stock of V-thread taps and dies, and the general adoption of the United States Standard or Sellers form for all 60-degree screw threads. There can be no question but that such action, as now definitely decided upon, will be of wide importance to tap and die manufacturers, users and dealers.

**THE "V-STANDARD" NO STANDARD.**

The V-standard, so called, is a "standard" existing only in theory; in practice the V-thread, nominally an equilateral triangle in section, is flattened at the top an amount varying with the practice of the different manufacturers. It is, of course, recognized that the slightly flattened top is an essential feature of this thread, as it is a mechanical impossibility to maintain the size of a tap with perfectly sharp threads while a single hole is being tapped; the removal of the metal during the operation causing the sharp tops to be worn away and the original diameter to be lost almost from the outset.

Consequently, as noted, it has been customary for the different manufacturers to leave the thread top slightly flattened, and this means that if the external diameter is made to size the diameter when measured at the pitch line in the V is somewhat larger than the true, theoretical diameter.

DIFFERENCES IN DIAMETER.

In cutting down the V-thread in the tap, some makers stop at one point, some at another. One concern may cut down to a pitch diameter 0.010 inch over the theoretical size, believing that the flat thus left at the top of the thread presents just sufficient surface to give satisfactory results, while another manufacturer may cut the thread a little deeper, and still another not quite so deep. No two work to the same dimensions and the result is that the actual thread diameters, measured in the V, differ with every make. This fact is well illustrated by the accompanying table, which gives the diameters adopted by various makers whose names and products are known throughout the manufacturing world.

"U. S. ST'D" THREADS VS. "V" STANDARD—(Continued).

enter at all. It has necessitated, therefore, the carrying of large stocks of taps and dies by all concerned, and to a considerable extent has restricted the market in which purchasers of these tools can secure their supplies.

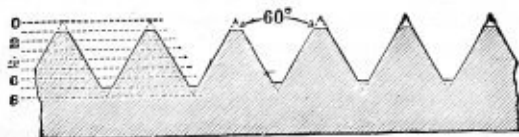
TWO POSSIBLE COURSES.

In considering the possibility of eliminating this undesirable state of affairs, two courses have been fully weighed and discussed by the tap and die manufacturers: one, the actual standardization of the V-thread; the other the adoption of the United States Standard form of thread for all regular tools, and the cessation of the manufacture of V-thread taps and dies except for special work. The pursuit of the former course would mean the establishment of a uniform pitch-line diameter for all V-thread taps and dies of given size, and this would necessarily involve a change in the present practice of each manufacturer concerned, some having to cut their V-threads smaller and some larger than heretofore in order to conform to the dimensions decided upon. At the best the result could be nothing better than a compromise measure serving to perpetuate a form of thread having at the present time little excuse for existence in connection with regular lines of work.

Furthermore, during the transition period, the standardization of V-thread taps and dies would create quite as many, and as serious, difficulties in establishments using that form of thread as would be involved in the straight out-and-out adoption of the United States Standard thread. That is, it would constitute an important departure from present practice so far as concerns the shops in question; and yet, although the advantage of V-thread uniformity would thus be secured, there would still remain the illogical, expensive and generally unsatisfactory situation of two standards existing for similar classes of work.

RECOGNITION OF THE ADVANTAGES OF THE UNITED STATES STANDARD.

There can be no question as to the supremacy of the United States Standard form of thread. Devised over forty years ago and recommended by the Franklin



Institute for general adoption by engineers, it has become the standard of the United States Government, and is used by practically all the railroads, bolt and nut makers and progressive manufacturers of the country.

"U. S. ST'D" THREADS VS. "V" STANDARD—(Continued).

table will reveal some interesting irregularities. The values in this column are equivalent to the outside diameter of the threaded piece less the depth of a single thread, as computed by the formula

$$\text{Pitch diameter} = D - \frac{0.866}{P}$$

where P equals the number of threads per inch and V the outside diameter. The columns headed A, B, C, etc., represent the actual sizes worked to by the different tap manufacturers. Thus in column A will be found the diameters adopted by one concern, while column B shows the practice of another maker; and so on across the table.

Considering, for example, the ¼-inch 20-thread size, the tabulated data show that this is made all the way from 0.0023 to 0.0103 inch larger than the standard pitch-line diameter; and, in the case of the ½-inch 12-thread, the range throughout the different lines is from 0.0062 to 0.0142 inch oversize in the thread angle. The ¾-inch 10-thread dimensions show an increase over the theoretical diameter ranging with different makers from 0.0068 to 0.0136 inch, and in the case of the 1-inch 8-thread size the oversize allowance is from 0.008 to 0.0182 inch. The variation for other sizes may be readily found by merely subtracting the values under the alphabetically headed columns from the corresponding sizes given in the column at the right of the table.

IMPRACTICABILITY OF THE V-STANDARD.

It is obvious upon inspection of the figures presented in this table that the term "V-standard" is a misnomer; and that an anomalous condition of affairs is created by the perpetuation of this irregular or alleged standard. Here, in short, is a so-called standard which it is impracticable to follow faithfully and to which, therefore, all V-thread taps and dies are necessarily an approximation only. Hence each manufacturer has developed a "standard" of his own, and the resulting lack of interchangeability between the products of these different makers has been a constant source of expense and inconvenience both to users and to the manufacturers themselves. It has made it impracticable in shops where screws are required to fit properly, and where, for illustration, a certain line of taps is used to make satisfactory use of another manufacturer's taps, as the screws will then either enter the tapped holes too freely, or possibly not

"U. S. ST'D" THREADS VS. "V" STANDARD.

Comparative Angle Sizes of "V" Threads as Made by Different Manufacturers of Taps

Size Threads	A	B	C	D	E	F	G	H	I	J
$\frac{1}{4}$ — 20	0.2107	0.217	0.214	0.2147	0.212	0.209	0.2147	0.214	0.217	0.217
$\frac{1}{8}$ — 18	0.2683	0.275	0.275	0.2724	0.270	0.267	0.2724	0.2755	0.2755	0.2745
$\frac{3}{8}$ — 16	0.3264	0.331	0.332	0.3290	0.327	0.325	0.3289	0.333	0.331	0.3315
$\frac{1}{2}$ — 14	0.3822	0.386	0.386	0.3836	0.382	0.380	0.3836	0.3875	0.386	0.386
$\frac{3}{4}$ — 12	0.4351	0.438	0.441	0.4378	0.4355	0.434	0.4358	0.442	0.439	0.441
$\frac{1}{2}$ — 11	0.4963	0.500	0.501	0.5003	0.4978		0.4983	0.50125	0.502	0.500
$\frac{1}{2}$ — 11	0.5525	0.556	0.559	0.5563	0.554	0.554	0.5543	0.55925	0.559	0.558
$\frac{1}{2}$ — 11	0.6153	0.619	0.625	0.6188	0.6168		0.6168	0.6217	0.622	0.6245
$\frac{3}{4}$ — 10	0.6702	0.673	0.671	0.6734	0.6715	0.671	0.6714	0.6715	0.677	0.671
$\frac{1}{2}$ — 10	0.7321	0.736	0.732	0.7359	0.734		0.7339	0.734	0.7395	0.7315
$\frac{3}{4}$ — 9	0.7875	0.789	0.795	0.7888	0.788	0.788	0.7868	0.796	0.796	0.795
$\frac{1}{2}$ — 9	0.8495	0.851	0.854	0.8513	0.8508		0.8493	0.858	0.858	0.8535
$\frac{1}{2}$ — 8	0.9017	0.902	0.900	0.9018	0.902	0.901	0.8998	0.901	0.910	0.900
$\frac{1}{2}$ — 7	1.0103	1.011	1.024	1.0113			1.0021	1.0135	1.022	1.022
$\frac{1}{2}$ — 7	1.1347	1.136	1.146	1.1363		1.137	1.1271	1.1385	1.147	1.145
$\frac{1}{2}$ — 6	1.2422	1.241	1.251	1.2407			1.2387	1.243	1.249	1.249
$\frac{1}{2}$ — 6	1.3678	1.366	1.378	1.3675		1.368	1.3637	1.368	1.376	1.377
$\frac{1}{2}$ — 5	1.4646	1.462	1.473	1.4618			1.4598	1.464	1.472	1.4715
$\frac{1}{2}$ — 5	1.5878	1.587	1.591	1.5868			1.5848	1.589	1.597	1.5795
$\frac{1}{2}$ — 4½	1.6904	1.693	1.692	1.6926			1.6928	1.6947	1.702	1.690
$\frac{1}{2}$ — 4½	1.8219	1.818	1.833	1.8176			1.8187	1.8197	1.828	1.831

Theoretical Diameter of Sharp V Thread Measured in the Angle	Pitch Diameter U.S.S.	Actual Pitch Di- ameter of One Maker's V Thread	Difference Left to Tap Out
0.2067	0.2175	0.2107	0.0068
0.2644	0.2764	0.2683	0.0081
0.3209	0.3344	0.3264	0.0080
0.3756	0.3911	0.3822	0.0089
0.4278	0.4459	0.4351	0.0108
0.4903	0.5084	0.4963	0.0121
0.5463	0.5659	0.5525	0.0134
	0.6285	0.6153	0.0132
0.6634	0.6850	0.6702	0.0148
0.7788	0.8028	0.7875	0.0153
0.8918	0.9188	0.9017	0.0171
1.001	1.0322	1.0103	0.0219
1.126	1.1572	1.1347	0.0225
1.230	1.2667	1.2422	0.0245
1.355	1.3917	1.3678	0.0239
1.467	1.4951	1.4646	0.0305
1.576	1.6201	1.5878	0.0323
1.682	1.7306	1.6904	0.0402
1.807	1.8557	1.8219	0.0338

A comparison of these figures with the true or theoretical pitch-line diameters of the perfectly sharp V, as given in the fourth column from the right of the

“U. S. ST'D” THREADS VS. “V” STANDARD—(Continued).

In 1898 the International Congress of Engineers convening at Zurich adopted this form of thread as the best for metric sizes and pitches, and it is now in almost universal use throughout the continental countries. More recently the Association of Licensed Automobile Manufacturers has adopted it as the standard of the organization, and in 1907 it was accepted by the American Society of Mechanical Engineers as the standard form of thread for machine screws.

For many years this standard form of thread, with depth equal to Pitch \times 0.6495, has been supplied by tap and die manufacturers, with practical interchangeability. The outline of the thread is such that it may be cut to the correct theoretical depth and to the true pitch-line diameter without the allowances found necessary when cutting the so-called sharp V-thread. It will be seen by comparing the pitch diameters of the United States Standard with even the largest of the V-thread diameters, that the United States Standard is a little larger in every case. This allows the retapping of any V-thread hole to bring it up to standard size, and avoids the necessity of discarding any machine parts but the screws or bolts. The United States Standard form of thread has been and is adhered to as a standard, and as such should render entirely feasible the elimination altogether of the V-form of thread for regular bolts, nuts and screws.

HAND TAPS

PLUG STYLE FOR

BRAZED BRASS TUBING.

Sizes	Threads Governed by the U. S.	Prices
	Formula	
1/4	27	\$0.45
5/16	27	.50
3/8	27	.55
7/16	27	.60
1/2	27	.70
5/8	27	.90
3/4	27	1.20
7/8	27	1.60
1	27	2.00

"U. S. STANDARD" THREADS VS. "V" STANDARD.
HAND TAPS.

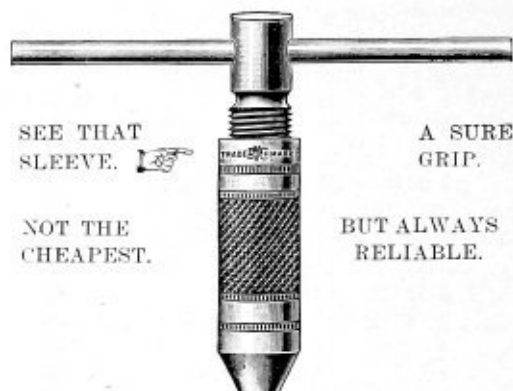
Sizes	Whole Length	Threads		Price	
		U. S.	Other Threads	Each	Per Set
		Standard Pitch	Governed by the U. S. Formula		
$\frac{1}{8}$	2	40	27, 32, 36	\$0.35	\$1.05
$\frac{3}{16}$	2 $\frac{3}{8}$	30	24, 27, 32	.35	1.05
$\frac{1}{4}$	2 $\frac{1}{2}$	20	24, 27, 28	.45	1.35
$\frac{5}{16}$	2 $\frac{23}{32}$	18	20, 24, 27	.50	1.50
$\frac{3}{8}$	2 $\frac{15}{16}$	16	20, 24, 27	.55	1.65
$\frac{7}{16}$	3 $\frac{5}{32}$	14	20, 27	.60	1.80
$\frac{1}{2}$	3 $\frac{3}{8}$	13	12, 20, 27	.70	2.10
$\frac{9}{16}$	3 $\frac{19}{32}$	12	18, 27	.80	2.40
$\frac{5}{8}$	3 $\frac{13}{16}$	11	12, 18, 27	.90	2.70
$\frac{11}{16}$	4 $\frac{1}{32}$	11	12, 16	1.05	3.15
$\frac{3}{4}$	4 $\frac{1}{4}$	10	12, 16, 27	1.20	3.60
$\frac{13}{16}$	4 $\frac{15}{32}$	10	12	1.40	4.20
$\frac{7}{8}$	4 $\frac{11}{16}$	9	12, 14, 27	1.60	4.80
$\frac{15}{16}$	4 $\frac{29}{32}$	9	12	1.80	5.40
1	5 $\frac{1}{8}$	8	12, 14, 27	2.00	6.00
1 $\frac{1}{8}$	5 $\frac{7}{16}$	7	12	2.25	6.75
1 $\frac{1}{4}$	5 $\frac{3}{4}$	7	12	2.60	7.80
1 $\frac{3}{8}$	6 $\frac{1}{16}$	6		3.00	9.00

HAND TAPS. A. L. A. M. STANDARD.

Diam. Inches	Total Length Inches	Threads		Price	
		Governed by	Formula	Each	Per Set
		the U. S.			
$\frac{1}{4}$	2 $\frac{1}{8}$		28	\$0.45	\$1.35
$\frac{5}{16}$	2 $\frac{23}{32}$		24	.50	1.50
$\frac{3}{8}$	2 $\frac{15}{16}$		24	.55	1.65
$\frac{7}{16}$	3 $\frac{5}{32}$		20	.60	1.80
$\frac{1}{2}$	3 $\frac{3}{8}$		20	.70	2.10
$\frac{9}{16}$	3 $\frac{19}{32}$		18	.80	2.40
$\frac{5}{8}$	3 $\frac{13}{16}$		18	.90	2.70
$\frac{11}{16}$	4 $\frac{1}{32}$		16	1.05	3.15
$\frac{3}{4}$	4 $\frac{1}{4}$		16	1.20	3.60
$\frac{7}{8}$	4 $\frac{11}{16}$		14	1.60	4.80
1	5 $\frac{1}{8}$		14	2.00	6.00

ADJUSTABLE TAP WRENCHES.

No. 1.



SEE THAT
SLEEVE. 

A SURE
GRIP.

NOT THE
CHEAPEST.

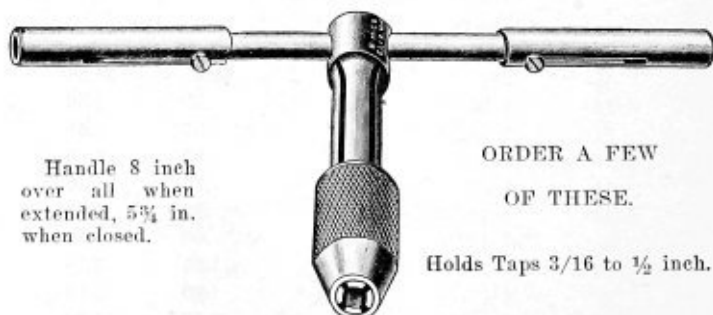
BUT ALWAYS
RELIABLE.

Holds Taps $1/16$ to $1/4$ inch. Holds Drills $1/16$ to $3/16$ inch. The long sleeve affords an excellent grip for the hand. The jaws are hardened and **you don't have to pry them to insert the tap.**

No. 1. Price, each.....\$0.50

ADJUSTABLE TAP WRENCH.

No. 3.



Handle 8 inch
over all when
extended, $5\frac{3}{4}$ in.
when closed.

ORDER A FEW
OF THESE.

Holds Taps $3/16$ to $1/2$ inch.

No. 3. Price each, \$1.25

TAP WRENCHES.



4½ inches long; fitting Taps 1/16 to 3/16..... Price Each \$0.50



No.	Length Inches	Holding Taps	Price Each
0	5	1/16 to 3/16	\$1.00
1	7½	¼ " ⅜	1.50
1½	9½	3/16 " ½	2.00
2	12	¼ " ⅝	2.00
3	14	½ " ¾	3.00



These Wrenches are drop forged from bar steel, have hardened tool steel jaws, are light, strong and durable.

In workmanship, style and finish they are unexcelled.

No.	Length Inches	Holding Taps	Price Each
6	7	1/16 to ¼	\$1.50
7	11	3/16 " ½	2.00
8	15	¼ " ¾	2.50
9	20	⅜ " 1	3.50

ACID TESTING ESSENTIALS.



ACID (TESTING) BOTTLES.

No.	Known as	Body dimensions		Dozen
		Diam.	High	
A.	Small	1 1/4"	x 1 "	\$1.50
B.	Medium	1 5/8"	x 1 1/4"	2.00
C.	Large	1 3/4"	x 1 5/8"	2.50

The necks of the bottles, also the stoppers, are ground, making them air tight.



GOLD TESTING NEEDLES.

U. S. Standard from 4 to 20 carats.

No. D. Price, \$2.00 each.

Note.—Every item in this catalogue has been given its own number. By writing your orders, viz.:

1/2 Doz., No. B—578,

we know exactly what is wanted, and when you get your bill you will know exactly on what page to find the item.



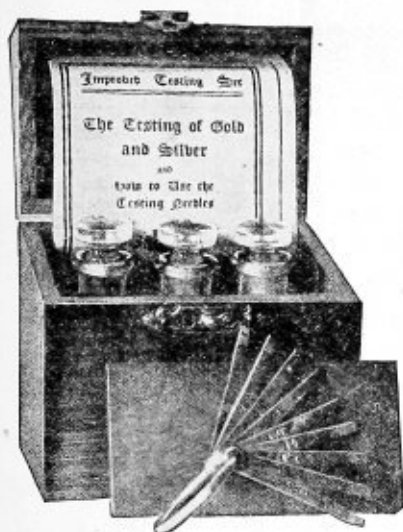
GOLD TESTING STONE.

Each stone strictly first class.

Size: 2 1/2" x 1 1/2" x 1/2".

No. E \$6.00 Dozen.

THE TESTING OF GOLD AND SILVER
and
HOW TO USE THE TESTING NEEDLES.



FILLED AND PLATED GOODS.

The only sure way to find if an article is solid or plated, is to file or cut it so you can get the acid to the inside metal. Then, if acid boils up green it is plated or filled. One warning must be given: There are some alloys with more silver in than standard alloyed gold that test by the stone and needles several karats better than they are. They can be told as a rule by the whitish or lemon yellow color. There are also some alloys made up by dishonest persons, containing platinum, Aluminum, Lead, etc., which the acid is very slow to attack and are liable to deceive; but such stuff is never made up into articles of jewelry, etc., and where a suspicious looking lump or bar of gold is offered the only proper way to do is to have it assayed.

Bottle No. 1 contains acid for use on Gold from 4k to 14k fine.

Bottle No. 2 contains acid for use on 12k to 20k gold.

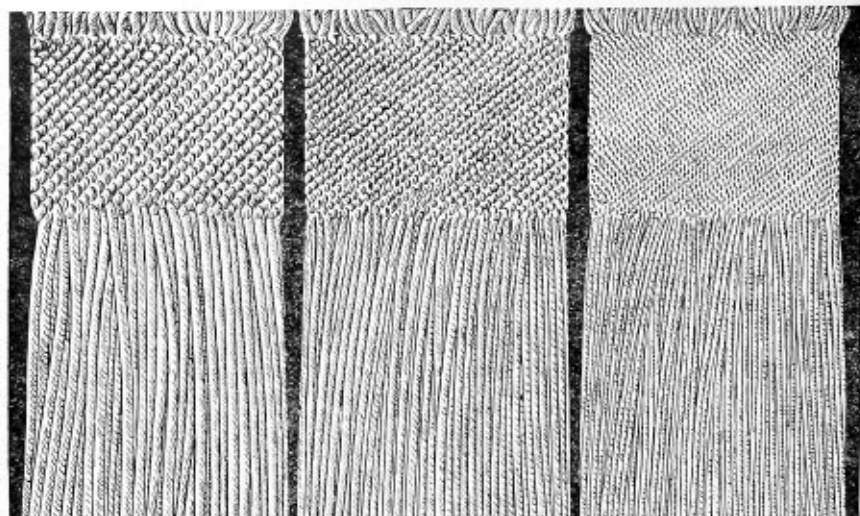
The bottle of Silver-Testing fluid is for use on articles supposed to be silver only, and anyone can determine whether an article is silver or base metal with absolute certainty by following the simple directions on bottle.

TESTING GOLD.

Rub a little acid No. 1 on the article you wish to test. If it does not change color, you will know it is probably 12K or better in quality. Should it turn brown or discolor quickly, you will know it is not as good as 12K. If lower than 12K take either the 8 or 10K needle and rub a good sized streak on the stone, say an inch long and about the width of the needle point; rub another streak alongside with the article to be tested, using care to rub them on stone equally thick; then apply the acid to both streaks at once; the streak that discolors most or is eaten off first is the lowest quality. Try with another needle and when the streak of the needle and the article you are testing are affected the same by the acid, you will know the gold is about the same quality as that needle used. Should the article not be affected by the No. 1 acid, you will then use the No. 2 acid in the same manner, using 12K needle or better until you find the streaks correspond. A little practice will soon make one proficient.

No. 1. Outfit complete for Gold and Silver.....	\$3.50
No. 2. " for Gold only.....	3.00

COTTON POLISHING THRUMS.

No. A.
Coarse.No. B.
MediumNo. C.
Fine.

The above illustration represents Cotton Polishing Thrums in their exact sizes, respectively: All sizes, \$0.25 per pound.

GENUINE IMPORTED BUFF SKIN THRUMS.

These come in lengths approximately 1 foot long. Each color is put up in bundles of 2 ounces each, containing assorted widths, $\frac{1}{8}$ " to $\frac{1}{4}$ ".

These thrums are stronger than any other kind. They will do more and better work than any other kind.

Number	D	E	G	H
Color	White	Tan	Gray	Brown
Per bundle	\$1.50	\$2.00	\$2.00	\$2.00

CHAMOIS THRUMS.

Approximately 1 foot lengths—3 ounces in a bundle.

No. J. $\frac{1}{8}$ ".

No. K. $\frac{3}{16}$ ".

No. L. $\frac{1}{4}$ ".

All sizes, \$ 1.35 per bundle.

" " 13.50 " dozen bundles.

LINEN THREAD FOR POLISHING.



Nos.	Skeins to lb.	Price per lb.
16	36	\$1.25
25	36	1.50
30	48	1.70
35	60	1.80
40	72	2.00
50	85	2.30
60	96	2.50

SWISS SLIDING TONGS.

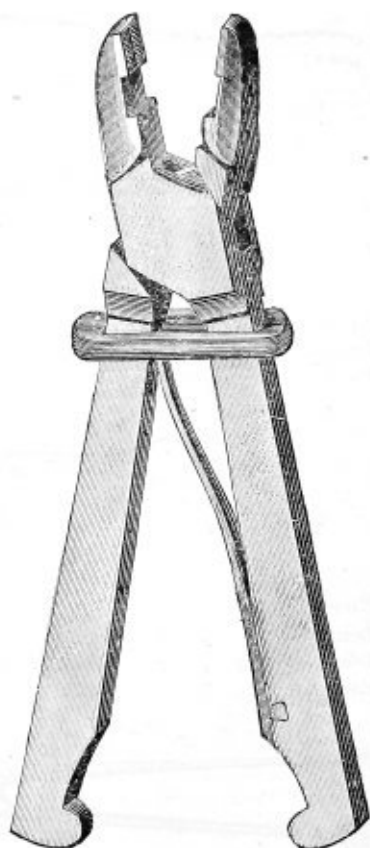


"VISE JAW."

Illustration actual size of a 4½" Tong.

See list below:

C, D and E.



"DOG NOSE."

Illustration actual size. Each

No. A. Black finish\$0.45

" B. Nickel-plated75

No. C—4½" long in Black Finish.....	Each	\$0.45
" D—4½" " is Nickeled	"	.70
" E—5 " " in Black Finish.....	"	.55
" G—5 " " is Nickeled	"	.80
" H—6 " " in Black Finish.....	"	.75
" J—6 " " is Nickeled	"	1.00

TONGS.

"MALLEABLE IRON."



No. 1	12" Dozen	\$4.00
No. 2	17" "	5.00



"FORGED STEEL."

(Curved Ends.)

Number—	A.	B.	C.	D.	E.	G.	H.	J.	K.
Lengths	12"	14"	16"	18"	20"	24"	27"	30"	36"
Each	\$0.40	0.50	0.55	0.60	0.65	0.75	1.00	1.25	1.50



"FORGED STEEL."

(With a Ring.)

Number—	L.	M.	N.	P.	R.
Lengths	18"	20"	24"	27"	30"
Diam. of ring	2"	2 1/4"	3"	3 1/4"	4"
Each	\$1.00	1.25	1.50	1.75	2.00



"SCORIFIER."

(Malleable Iron.)

No. 8	17 inches long	Each \$0.75
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LIGHT FORGED STEEL—"FORGING."

Number—	3	4	5	6	7	8	9	10
Lengths	12"	14"	16"	18"	20"	24"	27"	30"
Each	\$0.40	.50	.55	.60	.65	.75	1.00	1.25

Always affix page number to item No., viz.: 1/4 Doz. No. L—582.

NEWEST GASOLINE TORCH ON THE MARKET.



No. 7. INFANT.
\$1.25 each.



Showing Torch
with Burner Head
removed.

Every Infant torch is fitted with "Never Leak" pumps (patent applied for), the plungers of which screw down, thus remaining out of the way, and close a needle valve which is a positive shut-off.

This is an improvement over other makes, as in a great many instances the plungers come up and become bent, thereby making the pump useless.

We furnish two extra fiber washers with each torch, to be used on the filler plug.

Each Torch has an adjustable Soldering Iron Holder fitted onto same. Application for patent for this special feature has been duly made.

This Holder can be removed when not required.

DO NOT FORGET, when ordering from this catalogue, to always affix the page number to every item ordered. It not only helps us to fill the order quicker, but it helps you to locate the items quickly when you check off your bill.

GASOLINE TORCHES.

Use 74° Gasoline.



"HOT BLAST" No. 23.

Capacity.....one pint
 Height, over all.....8 inches
 Diameter.....3½ inches
 Net Weight.....2 lbs.
 Consumption..¼ pint per hour

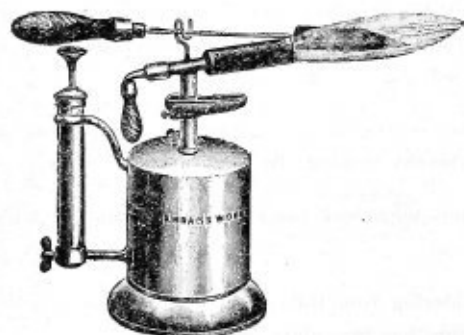
\$3.50 each.



"OLD RELIABLE" No. 12.

Capacity.....one quart
 Height, over all.....10 inches
 Diameter.....4 inches
 Net Weight.....2¾ lbs.
 Consumption..½ pint per hour

\$4.00 each.



"FRANKLIN" No. 11.

Capacity.....one pint
 Height over all..7½ inches
 Diameter.....3½ inches
 Net Weight.....1½ lbs.
 Consumption..½ pt. per hr.

\$3.50 each.

The Torches shown on this page produce a solid blue flame of 1,500 degrees F.

The No. 23 Torch has a world-wide reputation, having stood the test for years. It gives a "needle flame and a hot one." It is light and still powerful.

The No. 12 is practically the same as the No. 23, excepting much larger and will do much larger work, as well as the lightest work.

Always affix page number to item number, viz.: 1 only, No. 23—584.

GASOLINE TORCHES.

Use 74° Gasoline.



"TURNER" No. 65.
\$5.50 each.



"DOUBLE JET" No. 92.
\$6.75 each.

The burner, which generates a clear blue flame, is swiveled in such a manner that the flame can be raised or lowered, or pointed in almost any direction. Where a Bunsen Burner is needed, it is only necessary to point the flame upward. In that position, with the tripod (which is removable), metal may be melted, water heated.

Air pressure for operating this torch is obtained by means of a small force pump contained in the handle.

Capacity.....	one pint
Height over all.....	10½ inches
Diameter.....	3¾ inches
Net Weight.....	1¼ lbs.
Consumption.....	¼ pint per hour

Beautifully Nicked.

This torch is capable of doing work heretofore deemed impossible. About 3,000 degrees F. of heat can be obtained with this torch, which is nearly double the capacity of all single valve burners.

The pump is contained in the handle. Air valve is located at the base of the pump barrel. The filler plug is placed in the top of the tank.

Capacity.....	one quart
Height over all.....	9 inches
Diameter.....	4 inches
Net Weight.....	3 lbs.
Consumption.....	¾ pint per hour

Write your order this way, viz.: 1 only, No. 65—585.

POLISHING TANK OR TUBBING MACHINE.



PRICE
COMPLETE
\$60.00

The above illustration represents the Inner Tub that fits into a heavy Box Tank, fitted with a heavy cover, so that when in service the tub is thoroughly encased.

The floor space occupied by the tank is 26" x 36". The Tub is driven by Light and Loose Pulleys.

A great labor-saving device. Will do the work of FIVE OR SIX ordinary hands, **Polishing or Burnishing** in a workmanlike manner. Chains, Collar Buttons, Stick Pins, Beauty Pins, Rings, Charms, Safety Fob Fasteners, Hat Pins and other kinds of Jewelry can be Polished or Burnished in this machine.

**It Does Not Matter Whether It Be
Gold, Silver, Plate, Nickel or Brass,**

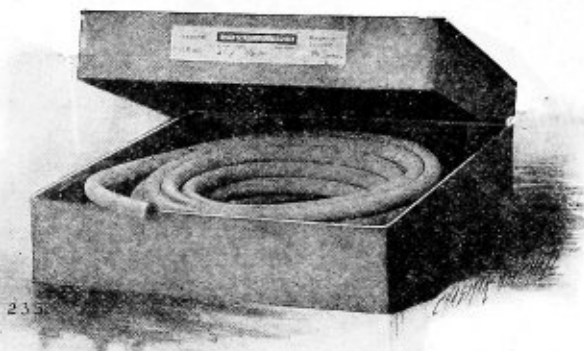
the articles above can be polished or burnished, a number of gross at a time, leaving them finished, already to card or ship; and, if desired after electro-plating, return to the machine and run for five or ten minutes, which will make your finish last longer and will also put as little or as much gloss on same as you may desire.

No factory today is complete without one or more of these machines. This machine is made in a first-class manner as to fittings and material used in construction; runs about forty revolutions per minute from main shaft, if desired.

Fill with water to bottom of shaft. Always **keep water in tank**, and inner tub in same. Steel Balls, Fig Soap and a little Ammonia is all that is needed for use with this machine.

NOTE—Let us have your inquiries before placing your orders elsewhere. We can interest you.

RUBBER TUBING.



The numerous purposes for which rubber tubing is used have been constantly increasing until its manufacture has become an important branch of the rubber industry. Formerly all tubing was hand-made; now comparatively little and only the purest is so manufactured; all other kinds are run from a machine. The rubber is carefully selected, thoroughly mixed and refined, and will not harden or crack. Our line embraces all kinds in sizes and grades necessary to meet the various conditions of service.

Machine-Made Tubing, White.—For all general purposes. Plain or corrugated surface.

Number Internal Diameter } Per foot	A	B	C	D	E	G	H	J	K
	$\frac{1}{8}$ "	$\frac{3}{16}$ "	$\frac{1}{4}$ "	$\frac{5}{16}$ "	$\frac{3}{8}$ "	$\frac{1}{2}$ "	$\frac{5}{8}$ "	$\frac{3}{4}$ "	1"
	\$0.08	\$0.12	\$0.16	\$0.18	\$0.20	\$0.25	\$0.30	\$0.35	\$0.45

OTHER TUBINGS—PRICES UPON REQUEST.

Pure Tubing, White.—For conveying gas, water, etc.

Pure Bottling Tubing, Red.—For bottlers' use. Sizes, $\frac{5}{16}$ and $\frac{3}{8}$ in., with $\frac{1}{16}$ in. wall, in 12 ft. lengths.

Pure Tubing, Black.—Usually made with a heavy wall, and is frequently cut into washers, buffers, etc.

Cloth Insertion Tubing, Red or White.—For water, air, beer pumps, etc. We also make an extra heavy red tubing for beer pumps, $\frac{1}{2}$ in., 5 ply, at special price.

Bicycle Pump Tubing.—For hand and foot pumps. Sizes, $\frac{1}{8}$ and $\frac{3}{16}$ in.

Fire Extinguisher Tubing.—Size, $\frac{7}{16}$ in., 3-ply, red.

ALMOND FLEXIBLE STEEL TUBE.



$\frac{1}{8}$ inch bore....	\$.40	per foot
$\frac{1}{4}$ " " " " ....	.54	" " "
$\frac{3}{8}$ " " " " ....	.67	" " "
$\frac{1}{2}$ " " " "	1.00	" " "

Provided with male (B) or female (F) fittings, or nozzle (A), without extra charge. Union fittings (U) at extra cost. Male fittings and Briggs standard pipe thread furnished when specifications are not given. No charge made for putting on fittings furnished by purchaser.

It is so flexible that the largest size (one-half inch bore) may be bent around a ten-inch circle, yet it is sufficiently stiff to support the end from which the oil flows, when short pieces are used.

It remains in any desired position.



It consists of nothing but tempered steel wire and Norway iron—no rubber, no asbestos, no packing of any sort used—nothing that will have a tendency to shorten its life or lessen its usefulness.



A perfectly tight flexible tube, adapted for all purposes for conveying air, gas, oil and other liquids, excepting those of an alkali or acid nature, where flexibility is desired.



It will wear almost indefinitely. Frequent bending will not destroy its usefulness in the least.

Specifications should always give length, inside diameter and style of fitting, whether male, female or nozzle.



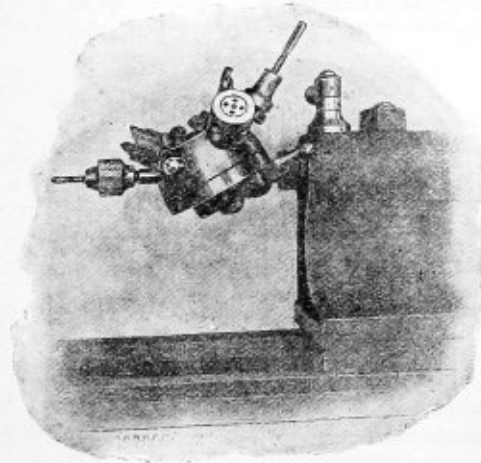
ALMOND TURRET HEAD.



Adapts a lathe to special work—fits any engine or speed lathe tailstock—converts it into a six-tool turret lathe.

Can be put into position and removed as quickly as an ordinary center. No attachments.

Furnished without tools or arbor.



**MADE IN
TWO
SIZES
NO. 1**

Diameter $3\frac{1}{2}$ in.
Socket Holes
 $\frac{1}{2}$ in. diam. 1 in.
deep
Weight $3\frac{1}{2}$ lbs.
Price \$13.00

NO. 2

Diameter $5\frac{1}{2}$ in.
Socket Holes
 $\frac{3}{8}$ in. diam.
 $1\frac{1}{2}$ in. deep
Weight 14 lbs.
Price \$25.00

SELF-CLOSING SOLDERING TWEEZERS



"A"

\$1.00 Dozen
.10 each



"B"

\$1.00 Dozen
.10 each



"C"

\$1.00 Dozen
.10 each



"D"

\$1.50 Dozen
.15 each



"E"

\$1.50 Dozen
.15 each



"G"

\$1.50 Dozen
.15 each



"H"

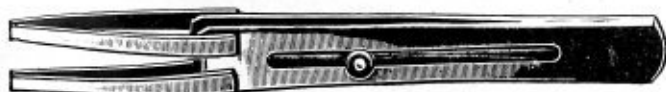
\$1.50 Dozen
.15 each



"J"

\$2.50 Dozen
.25 each

SOLDERING TONGS AND TWEEZERS.



No. A \$3.50 Dozen 35c Each
A Slide Lock Tweezer with two pairs of legs.
Finished Bright. Extreme length $4\frac{1}{2}$ ".



No. B \$3.50 Dozen 35c Each
A Slide Lock Tweezer. Polished. Extreme length $5\frac{3}{4}$ ".



Long Pointed Tweezer ($6\frac{1}{2}$ ") with Curved Ends.
No. C Bright Finish, \$3.50 Dozen. 35c Each
No. D Nickel Plated, 4.00 " 40c "



Long Pointed Tweezer ($6\frac{1}{2}$ ") with Straight Ends.
No. E Bright Finish, \$3.50 Dozen 35c Each
No. G Nickel Plated, 4.00 " 40c "



Common Tweezers. Bright Finish.

Numbers....	H	J	K	L	M	N	P	R
Lengths ...	3"	$3\frac{1}{2}$ "	4"	$4\frac{1}{2}$ "	5"	$5\frac{1}{2}$ "	6"	$6\frac{1}{2}$ "
Dozen	\$1.00	1.00	1.00	1.00	1.50	1.80	2.00	2.50



No. T Copper Tongs 9" long, \$1.00 Each

TWEEZERS.



These Tweezers are $5\frac{1}{4}$ " long.

No. B	Heavy Fine Points.	Nickel Plated,	\$4.00	Dozen	40c	Each
No. C	" " "	Plain Finish,	3.50	"	35c	"



These Tweezers are $4\frac{3}{4}$ " long.

No. D	First Quality.	Plain Finish.....	\$3.50	Dozen	35c	Each
No. E	Second " "	" " "	2.50	"	25c	"



This Tweezer is $4\frac{1}{2}$ " long.

No. G	First Quality.	Plain Finish.....	\$3.00	Dozen	30c	Each
No. T	Second " "	" " "	2.50	"	25c	"



This is a Hollow Tweezer $4\frac{3}{4}$ " long.

No. U	Nickel Plated.....	\$2.50	Dozen	25c	Each
No. V	Plain Finish.....	2.00	"	20c	"



This Tweezer is nicely Nickel Plated.

No. W	Long Pointed Skeleton Tweezer.....	\$1.80	Dozen	18c	Each
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TWEEZERS.



No. P R Tweezers. Nickel Plated, \$2.00 Dozen 20c Each



No. 00 Tweezers. Nickel Plated, \$1.80 Dozen 18c Each



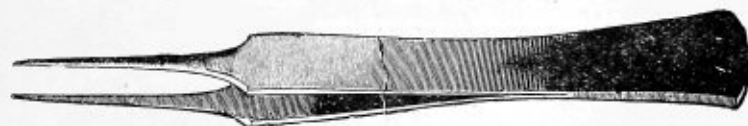
No. H Tweezers. Nickel Plated, \$1.50 Dozen 15c Each



No. J Tweezers. Nickel Plated, \$2.00 Dozen 20c Each
 No. K " Plain Finish, \$1.50 " 15c "

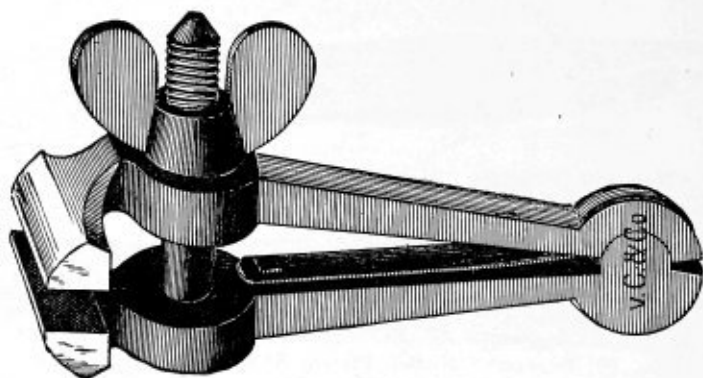


No. M Tweezers. Nickel Plated, \$1.75 Dozen 17c Each
 No. N " Plain Finish, 1.25 " 12c "



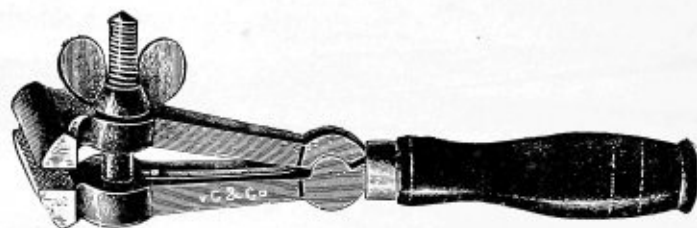
No. AA Tweezers. Nickel Plated, \$1.80 Dozen 18c Each

HAND VISES



No. 660 Best Cast Steel—Polished Jaws.

Lengths..	3	3½	4	4½	5	5½	6 inches
Dozen...	\$9.00	9.00	9.00	10.00	12.00	14.50	16.50



No. 662 Best Cast Steel—Polished Jaws.

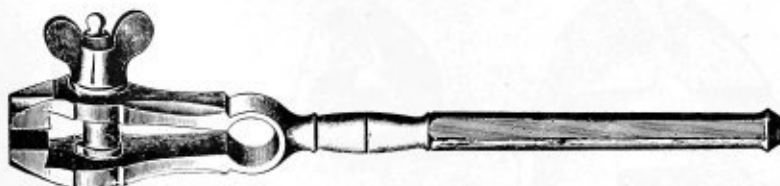
Lengths..	3	3½	4	4½	5 inches
Dozen....	\$8.50	8.50	8.50	9.50	10.80

Extra Bolts and Nuts for
above Hand Vises:

	Dozen
For 3" Vise	\$3.00
" 3½ "	3.00
" 4 "	3.50
" 4½ "	3.75
" 5 "	4.25
" 5½ "	4.50
" 6 "	5.00

HOLLOW HANDLE PIN VISES

Strictly the best tools of their kind made. Beautifully finished.



With "Dog-Nose" Jaws.

No. 1 1st quality	4½" long,	\$7.00 Doz.	\$0.70 each
" 2 1st "	5" "	9.00 "	.90 "

Same as above, with "Vise-Nose" Jaws.

No. 3 1st quality	4½" long,	\$7.00 Doz.	\$0.70 each
" 4 1st "	5" "	9.00 "	.90 "



With "Dog-Nose" Jaws.

No. 5 2nd quality	4½" long,	\$5.50 Doz.	\$0.55 each
" 6 3rd "	4½" "	4.50 "	.45 "
" 7 2nd "	6" "	9.00 "	.90 "

This same pattern tool with "Vise-Nose" Jaws.

No. 8 2nd quality	4½" long,	\$5.50 Doz.	\$0.55 each
" 9 3rd "	4½" "	4.50 "	.45 "



With "Dog-Nose" Jaws.

No. 10 1st quality	4½" long,	\$9.00 Doz.	\$0.90 each
" 11 2nd "	4½" "	7.50 "	.75 "

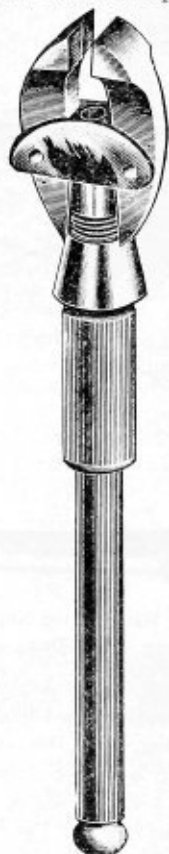
No. 12 Screw and Nut for any of above Vises \$1.00 Dozen.....\$0.10 each

HAND AND PIN VISES—HOLLOW HANDLES.

Illustrations are actual sizes of each respective Vise.
Each tool full nickel-plated.



No. A Each, \$1.50



No. B Each, \$1.25

Note.—Nos. A, B and C represent the genuine
Lowell Vises—an American product.

IMPORTED VISES.

Same pattern and sizes as A, B and C.

No.	Sizes.	Dozen.	Each.
D	Large	\$10.00	\$1.00
E	Medium	8.50	.85
G	Small	7.50	.75

These are exceedingly good tools at low prices.

Order by respective number and affix the page
number to avoid error, viz.:

1½ Doz. No. E—596.



No. C Each, \$1.00

HAND AND PIN VISES. HOLLOW HANDLES.

Made of BEST Materials and BEST Workmanship.



Each.
No. 50 \$1.25



Each.
No. 60 \$1.25



Each.
No. 40 \$1.00

The No. 50 Vise is nearly 6" long; it holds 3-16 inch and smaller.

The Jaws are hardened Steel, nickel-plated.

The Octagon-shaped handle is advantageous many times, where more holding power is required.

The No. 60 Vise has Polished Rosewood Finish Handle.

The Jaws are Hardened Steel, nicely finished.

The Jaws are 1 1/4" wide and open parallel 3/4 inch.

The No. 40 Pin Vise holds drills 3-16 inch and smaller. Holds taps 1/4 inch and smaller.

It is made of Steel throughout. Jaws are Hardened.

The chuck and handle is nicely finished.

The handle is of octagon shape, so it may be clamped in a vise. Insert a pin in hole in handle and you have a T handle Tap Wrench. It may be used for holding drills when drilling centre holes in shafts, etc. Hand is relieved from strain by inserting pin in cross hole of the handle and resting it on the tool post of lathe.

"STEPHENS" JEWELERS' AND WATCHMAKERS' VISES



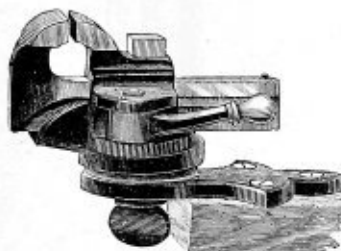
Jaws are 2" wide. Open 2¼". Wt. 2½ lbs.

Number	Each
101 Black	\$3.75
102 Nickel-plated	5.25
105 Black with anvil.....	4.50
106 Nickel-plated with anvil.....	6.50



Jaws are 2" wide. Open 2¼". Wt. 3½ lbs.

Number	Each
111 Black	\$4.50
115 " with anvil	5.25
116 Nickel-plated with anvil.....	7.25



Jaws are 2" wide. Open 2¼". Wt. 3½ lbs.

Number	Each
117 Black with anvil.....	\$5.25
118 Nickel-plated with anvil.....	7.25

All the above Vises have springs which close the jaws automatically and hold the work firmly until secured by the lever.

TOOL MAKERS' SIZES WITH ROUGH OR SMOOTH JAWS.

Style of No. 101.

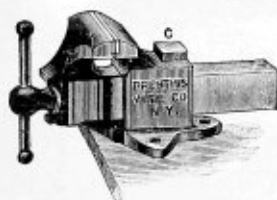
	No.	Jaws	Each	Opens	Weight
Swivel Base	3.....	8¾ in.....	\$ 5.50.....	3 in.....	12 lbs.
	4.....	2¾ " Automatic Jaw	6.00.....	3 ".....	12 "
	5.....	3½ ".....	9.00.....	5 ".....	35 "
	6.....	4½ ".....	12.50.....	6½ ".....	60 "

Style of No. 111.

	No.	Jaws	Each	Opens	Weight
Flat Base	22.....	2¼ in.....	\$ 6.50.....	3 in.....	14 lbs.
	23.....	2¾ " Automatic Jaw	7.00.....	3 ".....	14 "
	24.....	3½ ".....	10.50.....	5 ".....	42 "
	25.....	4½ ".....	14.50.....	6½ ".....	65 "

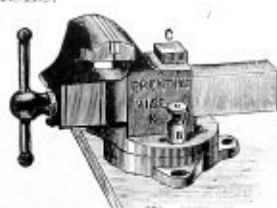
Tool Makers' Sizes always sent with **Rough Jaws**, unless Smooth Jaws are specified.

PRENTISS PATENT VISES.



WITH FIXED JAWS. Each

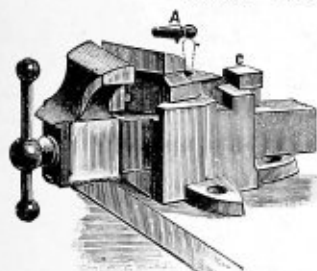
No. 34.	Black	\$3.00
" 34½.	Nickel	4.75



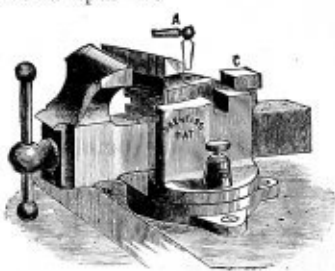
WITH FIXED JAWS. Each

No. 39.	Black	\$4.00
" 39½.	Nickel	5.75

Above Vises have Jaws 2" wide and open 2".



THESE
TWO VISES
HAVE ONE
ADJUSTABLE
JAW.



WITH FLAT BASE. Each

No. 30.	Black	\$3.50
" 31.	Nickel	5.75

WITH SWIVEL BASE. Each

No. 35.	Black	\$4.50
" 36.	Nickel	6.75

Above Vises have Jaws 1¾" wide and open 1¾".

No. 32.	Black	\$4.00
" 33.	Nickel	6.50

No. 37.	Black	\$5.00
" 38.	Nickel	7.50

These two Vises have Jaws 2" wide and open 2".

All the above Vises are made with Cast Steel Square Anvil (letter C), raised at the back, and Jaws Rough-Cut or Smooth. Specify which you want.

TOOL MAKERS' SIZES.

FLAT BASE—SWIVEL JAW.

No. 1—	\$5.50—13½ lbs.
	2½" Jaws open 3½".
No. 2—	\$7.00—28 lbs.
	3½" Jaws open 4¾".
No. 2½—	\$9.00—41 lbs.
	4" Jaws open 5¼".
No. 3—	\$10.50—54 lbs.
	4½" Jaws open 6".

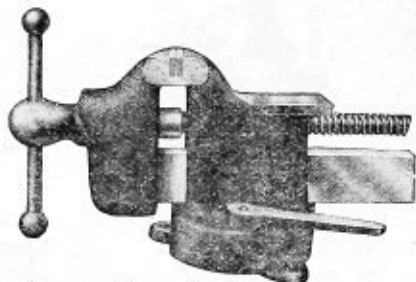
SWIVEL BASE AND JAW.

No. 18—	\$6.75—17 lbs.
	2½" Jaws open 3½".
No. 19—	\$8.50—32 lbs.
	3½" Jaws open 4¾".
No. 19½—	\$10.50—46 lbs.
	4" Jaws open 5¼".
No. 20—	\$12.50—65 lbs.
	4½" Jaws open 6".

Tool Makers' Vises DO NOT have the Square Anvil "C." This is only furnished on the Jewelers' sizes.

ROCK ISLAND VISES.

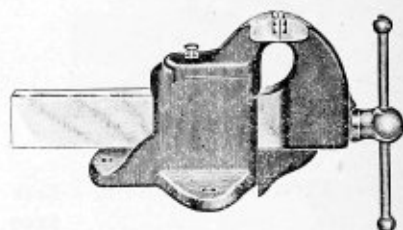
All dimensions are given in inches.



These Vises have a Wrought Steel Slide Bar, Swivel Base, Solid Jaw.

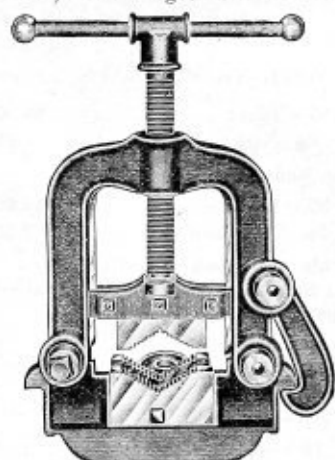
No.	Width.		Wt.	
	Jaw.	Opens.	Lbs.	Each.
350	2"	2½"	6	\$1.80
351	2½	3	11	2.00
352	3	3½	13	2.40
353	3½	4	19	2.75
354	4	6	30	4.00

Rock Island Vises have no screws, pins, levers or complicated mechanism to wear, stick or get out of order.

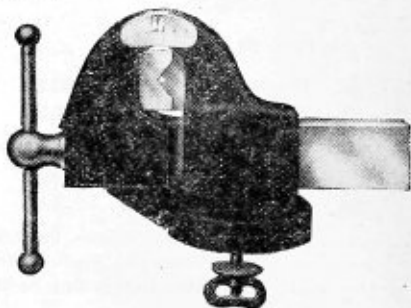


Stationary Base—Swivel Jaw.

No.	Width.		Wt.	
	Jaw.	Opens.	Lbs.	Each.
81	3½	5	37	\$ 3.50
82	4	6½	50	11.00
83	4½	7½	65	13.00
84	5¼	8½	95	19.50



PIPE VISES.



The body and base are malleable, screw and handle cold rolled. Steel jaws are crucible tool steel.

No.	Capacity.	Each.
115	Pipe, ¼ to 2½ in.	\$10.00
116	Pipe, ¼ to 3½ in.	14.00
117	Pipe, ½ to 4½ in.	20.00

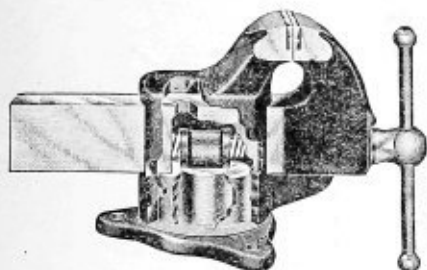
This is the strongest pipe vise on the market. No vise is better made, better finished or more durable.

The jaws are crucible tool steel carefully hardened. The front pipe jaws are reversible.

No.	Width	Weight.	Capacity	Each.
	Jaw.		Pipe.	
141	3½ in.	55 lbs.	¼ to 2 in.	\$16.00
142	4¼ in.	73 lbs.	¼ to 3 in.	20.00
143	5 in.	125 lbs.	½ to 4 in.	28.00

ROCK ISLAND VISES.

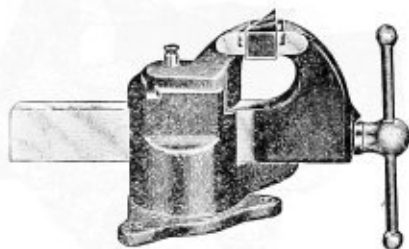
All dimensions are given in inches.



Swivel Base—Solid Jaw.

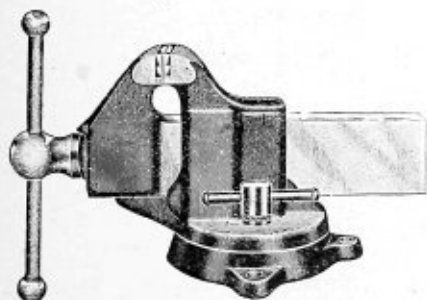
When the work is fastened in the jaws the rotation is stopped automatically, and will not slip.

No.	Width		Wt.	
	Jaw.	Opens.	Lbs.	Each.
1	1½"	2"	3	\$ 6.00
2	2½"	2½"	6	7.50
3	3	4	20	9.50
4	3½"	5	33	11.00
5	4	6	56	13.50
6	4½"	8	75	16.50



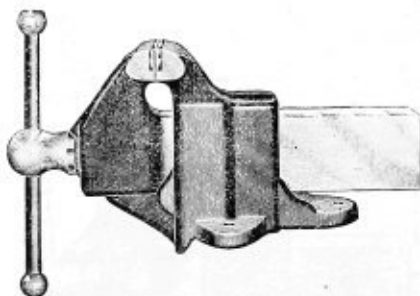
Swivel Base and Jaw. The base is locked automatically by tightening the jaws.

No.	Width		Wt.	
	Jaw.	Opens.	Lbs.	Each.
20	3½"	5"	44	\$13.00
21	4	6	66	16.00
22	4½"	8	85	19.80
23	5¼"	9	135	28.80



Swivel Base—Solid Jaw.
Strictly a first-class Tool.

No.	Width		Wt.	
	Jaw.	Opens.	Lbs.	Each.
70	2½"	2½"	20	\$ 5.50
71	3	4	28	7.50
72	3½"	5	38	8.75
73	4	6	54	10.50
74	4½"	6½"	65	12.00
75	5	7½"	90	16.00

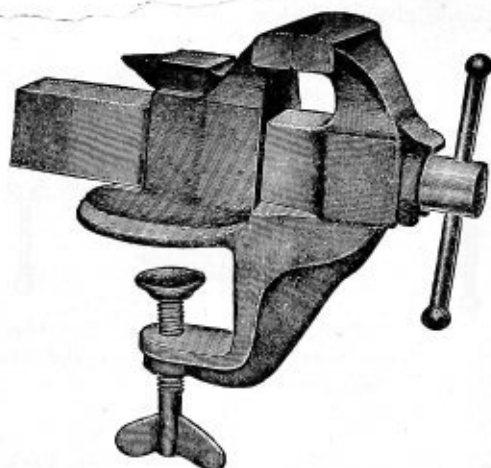


Stationary Base—Solid Jaw.

No.	Width		Wt.	
	Jaw.	Opens.	Lbs.	Each.
90	2½"	2½"	17	\$ 5.00
91	3	4	22	6.00
92	3½"	5	28	7.00
93	4	6	42	8.50
94	4½"	6½"	54	10.00
95	5	7½"	75	13.00

Rock Island Vises have no screws, pins, levers, or complicated mechanism to wear, stick or get out of order.

THE BEST LOW PRICED VISES MADE.

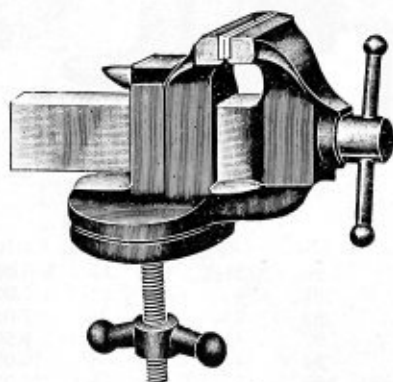


With Plain Iron Jaws.

No.	Each.	Jaws.	Weight
40	\$0.75	1½"	3 lbs.
42	.95	1¾"	3¼ "
44	1.15	2	3½ "
46	1.50	2¼"	4 "
48	1.75	2½"	5 "
52	2.40	3	8¾ "

Same Style as Above, but with Steel Faced Jaws.

No.	Each	Jaws	Weight
41	\$1.00	1½"	3 lbs.
43	1.25	1¾"	3¼ "
45	1.50	2	3½ "
47	1.75	2¼"	4 "
49	2.10	2½"	5 "
53	2.85	3	8¾ "

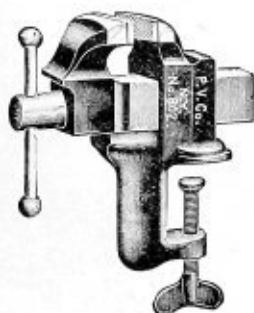


With Steel Faced Jaws.

No.	Each	Jaws	Weight
56	\$1.25	1¾"	3 lbs.
57	1.50	2	3½ "
58	1.90	2¼"	4½ "
59	2.35	2½"	5½ "
61	3.15	3	9½ "

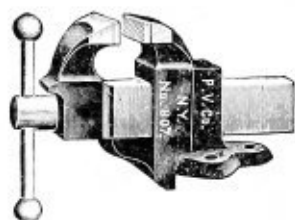
Best Iron Used. Each Vise carefully fitted. Working parts nicely finished. on orders for less than Three Dollars in value. In ordering please specify No. Bodies painted.

PRENTISS "STAR" VISES.



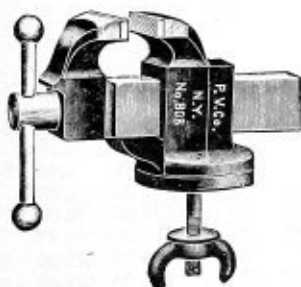
WITH BENCH CLAMP.

No.	800	801	802
Jaws	1½"	1¾"	2"
Opens	1¼"	1½"	2"
Weight	1½ lb.	2¼ lb.	6 lb.
Each	\$1.60	\$2.25	\$3.50



WITH STATIONARY BASE.

No.	803	805	807
Jaws	2"	2½"	3"
Opens	2"	2¾"	4½"
Weight	5½ lb.	9½ lb.	15 lb.
Each	\$3.50	\$4.75	\$5.75



WITH SWIVEL BASE.

No.	804	806	808
Jaws	2"	2½"	3"
Opens	2"	2¾"	4½"
Weight	6 lb.	11 lb.	17 lb.
Each	\$3.90	\$5.50	\$7.25

Order always by respective numbers and be SURE to affix the page number to every item—viz.:

2 only, No. 801—603.

A very simple way to write orders.

DIRECT CONNECTED EXHAUST FANS.

For Use with Dust Collecting System. See Page 189.

VOLUME EXHAUSTERS WITH
CONNECTED MOTORS.

For Alternating Current.

60-Cycle.

Single

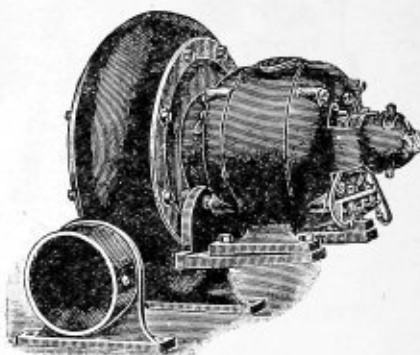
Phase 110 Polyphase

220 and 110, 220 and

440 volts 440 volts

No.	Speed	440 volts	440 volts
2	3,600	\$ 62.00	\$ 59.00
3	1,800	74.00	64.00
4	1,800	103.00	80.00
5	1,800	121.00	97.00
6	1,800	140.00	110.00
7	1,800	170.00	132.00
8	1,200	211.00	170.00
9	1,200	.....	225.00

For inlet and outlet dimensions
see list below of respective
numbers.



VOLUME EXHAUSTERS WITH CONNECTED MOTORS.

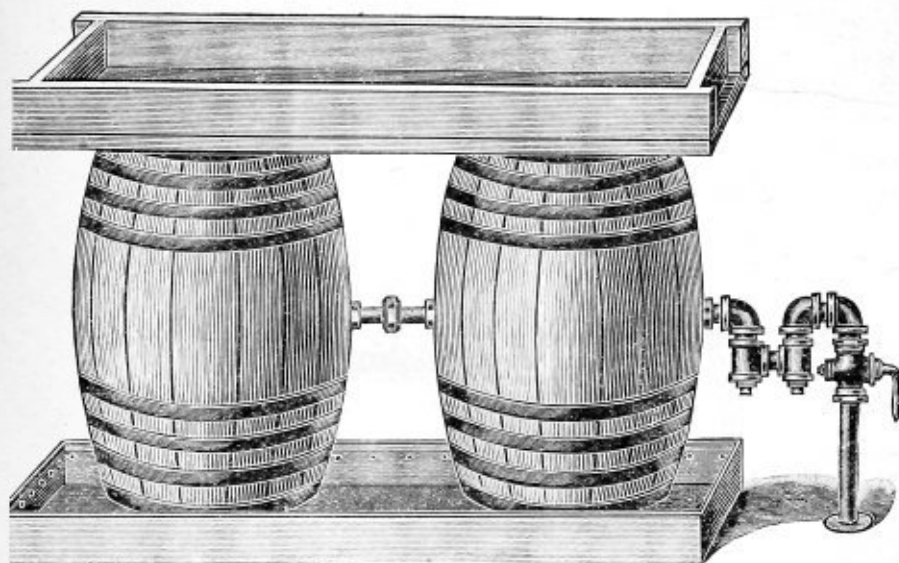
For Direct Current Only.

With D. C. Motor			Blower		With D. C. Motor Constant Speed				Extra for Speed Control	Extra for Enclosing	No. of Dust Collector this Motor requires	
No.	Pressure Oz.	Capacity cu. ft.	Diam. Inlet	Diam. Outlet	Height	Speed	110 V.	220 V.				500 V.
2	1 1/4	300	5"	4"	15"	3000	\$69.00	\$71.40	\$78.00	\$4.20	\$3.60	1
3	1 1/2	500	5 3/8	5	18	2400	78.00	81.00	87.60	4.20	3.60	2
4	1 1/2	725	6 1/2	6	20	2400	96.00	97.20	103.20	5.40	4.50	2
5	1 1/2	1000	7 1/2	7 1/2	24	1800	114.00	115.20	120.00	10.80	4.50	3
6	1 1/2	1210	9	9	27	1800	150.00	153.00	156.00	10.80	6.20	4
7	1 1/2	2000	10 1/2	10 1/2	33	1650	180.00	193.00	186.00	14.40	7.80	5
8	1 1/2	2750	12	12	40	1600	234.00	236.40	240.00	21.00	10.20	6
9	1 1/2	3400	14 1/2	14 1/2	45	1050	270.00	273.00	276.00	21.00	10.20	7
10	1 1/2	4000	15 3/4	16 1/2	55 3/4	900	348.00	352.00	357.00	21.00	14.10	8
11	1 1/2	5500	17 3/4	18 1/2	61	800	450.00	456.00	468.00	25.20	17.40	9

Prices Include Automatic Release Starter.

Always state whether Fan wanted is to be placed at the right-hand end or left-hand end of the bench. Also whether discharge is to be like the illustration or upward as in many cases is best suited.

WASH BASIN.



WASH BASIN.

No.	Size	For	Each
A	24"x28"	1 bbl.	\$ 6.00
B	24"x62"	2 bbls.	7.75
C	24"x92"	3. "	11.75
D	24"x126"	4. "	15.25

DRIP PAN.

No.	Size	For	Each
E	24"x26"	1 bbl.	\$3.50
G	26"x56"	2 bbls.	4.50
H	26"x90"	3. "	6.75
J	26"x120"	3. "	9.00

Barrels and fittings are not included in prices. We show them set up to assist customer in making proper installation.

Notice:—Special attention is requested to our new system of writing orders. Always affix the page number to the item number in every case, viz.:

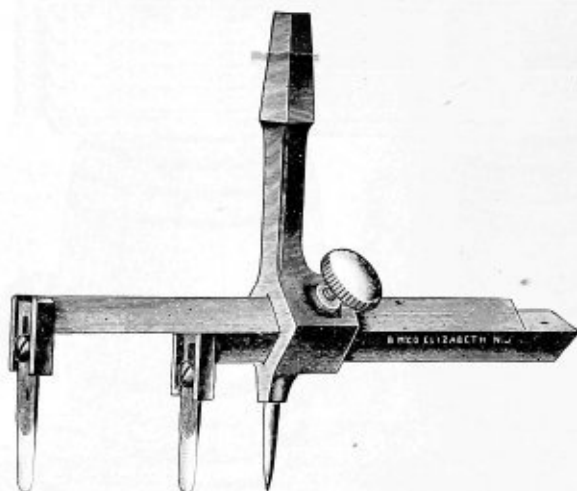
1 only, No. B—605.

No. B tells us the item that is wanted.

No. 605 tells us the page on which the item is to be found—and when you check your invoice this system helps you also.

It is a great Time Saver.

WASHER CUTTER.



No. 2\$1.50 each

The Best and only Cutter of its kind made.

CUTS WASHERS UP TO 12 INCH DIAMETER.

Blades can be lowered as they wear off, and when used up, instead of buying a new washer cutter, you replace the blades at a slight cost.

SPECIAL NOTE.

We carry the largest and best assortment of Fine Tools, Machinery and Supplies in the United States.

This is our first catalog and it possesses many valuable features that are meritorious.

- 1st. It is arranged like a Telephone Book—Alphabetically throughout.
- 2nd. Adjoining each folio number is the name of the item in every case, A to Z.
- 3rd. Our New System of writing orders is ahead of anything known today.
- 4th. This Book is a Time Saver—Use it!!

WASTE AND WASTE CANS.



This illustration represents a bale of Cotton Waste.

We put this waste up in bags containing 1 lb., 2 lbs. and 5 lbs., a most convenient way for the trade to carry waste.

PRICE PER POUND \$0.15.

PUT UP IN 10-LB. BALES, PRICE PER POUND \$0.13.

100-lb. bale and 250-lb. bale at special prices.



This illustration represents an Oily Waste Can.

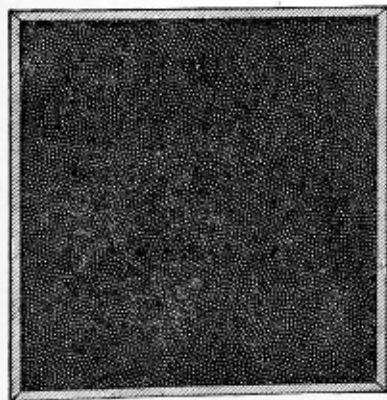
The best and safest receptacle a factory can use for depositing old waste.

No factory should be without them.

These Cans are made of galvanized iron, have self-closing cover, with improved spring attachment. 11¼" diam. x 15" high.

Price, \$18.00 dozen.

RAW SILK WIPERS.



These Wipers are made for wiping machinery and general shop use, also found of good value for private home use, preferable to cotton waste, cheaper and better because they can be washed many times and are as good as new.

No. 1	12x15"	\$1.00	Dozen
No. 2	12x24	1.50	"
No. 3	12x30	2.00	"
No. 4	18x18	2.00	"
No. 5	18x30	3.25	"
No. 6	18x36	3.85	"

"WAX" FOR JEWELERS, SILVERSMITHS, ETC.

PLASTILINA takes and retains the most delicate impressions. It does not stick nor crack. Atmosphere has no effect on it. It requires no sprinkling and will retain its plastic qualities.

PLASTILINA can be used over and over again, and is therefore the **best** and the **cheapest** modeling material.

COLORS—CLAY, GRAYISH-GREEN, TERRA-COTTA.

FURNISHED SOFT, MEDIUM HARD AND HARD.

Specify exactly what you want.

$\frac{1}{4}$ lb. CAKE.....	\$0.30	1 lb. CAKE.....	\$1.00
-----------------------------	--------	-----------------	--------

AMERICAN MODELING WAX. In $\frac{1}{4}$ -lb. Round Cakes.

No. A, Red.

No. B, Green.

Red or Green, Price.....per cake \$0.30

Red or Green, Price.....per lb. 1.00

BEESWAX IN SMALL ROUND CAKES.

They measure $3\frac{3}{8}$ " diameter by $\frac{3}{16}$ " thick.

Eight cakes weigh one pound.

	Per Cake.	Per Lb.
No. C, White...	\$0.10	\$0.70
No. D, Yellow...	.10	.60

COMMON YELLOW BEESWAX.

No. E, $\frac{1}{4}$ -lb. Cakes each \$0.15

No. G, $\frac{1}{2}$ -lb. Cakes each .25

No. H, 1-lb. Cakes each .45

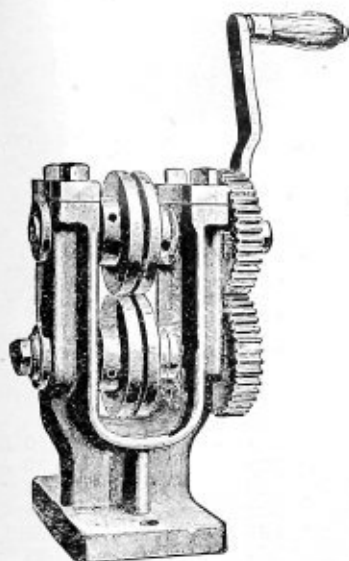
BURNISHING SOAP.

In $\frac{1}{2}$ -lb. Bars.

No. J, Price....per bar \$0.07

Note—If there is anything you need and fail to find it among the pages of this book please make known to us your requirements and we will cheerfully and promptly give you the information desired. We have a special department to render just such service—to our customers service is free—therefore be not afraid to ask anything.

WIRE SWAGING AND TWISTING MACHINES.



The adjoining illustration represents a

HAND SWAGING MACHINE

Specially made for pointing gold, silver and plated wire or tubing. A long, tapering point can be made on this machine, which enables a number of drawings to be made from the same point. Rolls are $3\frac{7}{8}$ " diameter, $\frac{7}{8}$ " thick, having a half-round taper groove starting from $\frac{1}{4}$ gradually down to $\frac{1}{32}$, so stock above the size up to $\frac{1}{4}$ can be taper. The crank is 10" long and can be placed at six different positions at the convenience of the operator, for different sizes of stock.

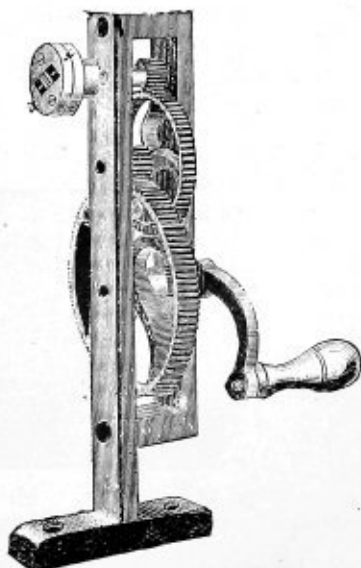
No. A....\$50.00

WIRE TWISTING MACHINE.

The wire is securely held in the two jaw chucks shown.

This is a very handy tool.

No. B....\$9.00

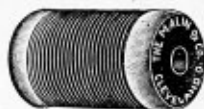


IRON AND STEEL WIRE.

ANNEALED IRON BINDING
WIRE.

Iron Binding Wire is put up into bundles "or stones" containing 12 lbs. each. We can furnish any quantity desired, from 1 lb. up.

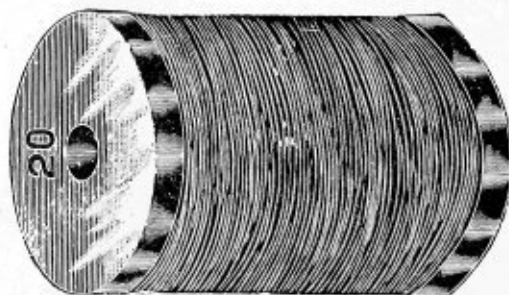
No.	lb.	No.	lb.
16	\$0 14	27	\$0 28
17	15	28	29
18	16	29	30
19	19	30	32
20	20	31	33
21	21	32	35
22	22	33	37
23	23	34	40
24	24	35	45
25	25	36	55
26	26		

SHELLAC COATED
ANNEALED STEEL WIRE.

On Spools. One Dozen Spools in a Box.
Price per Dozen Spools.

Gauge of wire	¼ lb. spools	½ lb. spools	1 lb. spools
16	\$0.96	\$1.58	\$2.46
17	.96	1.60	2.56
18	.96	1.64	2.64
19	1.02	1.66	2.68
20	1.02	1.68	2.76
21	1.08	1.74	2.86
22	1.10	1.80	2.96
23	1.12	1.86	3.05
24	1.14	1.94	3.15
25	1.18	2.00	3.20
26	1.20	2.04	3.30
27	1.20	2.06	3.53
28	1.22	2.13	3.65
29	1.26	2.21	3.78
30	1.34	2.35	4.03
31	1.39	2.43	4.16
32	1.47	2.57	4.41
33	1.55	2.72	4.66
34	1.68	2.94	5.04
35	1.89	3.31	5.67
36	2.20	3.94	6.73

IMPORTED IRON BINDING WIRE.



¼ LB.
SPOOLS.

Nos. 10 to 18	20	22	24	26	28	30	32
Per doz., \$0.80	\$0.90	\$0.95	\$1.00	\$1.20	\$1.50	\$1.60	\$1.80

Specify fully size, kind and quantity, also give the page number.

WIRE IN COILS.

All prices are per pound.

IMPORTED SCRATCH BRUSH
WIRE.

Decimal Equivalents in		Steel	Brass	Com- position
Nos.	Thousandths			
26	.0145"	\$0 60	\$1 20	\$2 50
27	.014	60	1 20	2 50
28	.0135	60	1 20	2 50
29	.013	60	1 20	2 50
30	.0125	60	1 20	2 50
31	.012	64	1 25	2 50
32	.0105	66	1 30	2 50
33	.010	68	1 35	2 50
34	.00975	72	1 40	2 50
35	.0095	74	1 45	2 50
36	.009	78	1 50	2 60
37	.0085	86	1 55	2 65
38	.008	94	1 60	2 75
39	.0075	1 08	1 65	2 90
40	.007	1 22	1 70	3 05
41	.00625	1 28	1 90	3 40
42	.00575	1 40	2 05	3 50
43	.0055	1 60	2 15	3 65
44	.0045	1 88	2 30	3 80
45	.00425	2 20	2 50	3 95
46	.004	2 54	2 80	4 40
47	.0035	2 94	3 25	4 80
48	.00325	3 50	3 75	5 40
49	.003	4 40	4 35	6 60
50	.00275	5 32	5 10	7 90
51	.0025	6 38	6 10	8 70
52	.00225	7 80	7 20	10 20

For Spring Brass Wire, add 2c to
Common High Brass List.

		Common High Brass	German Silver 18%
All Nos. to No. 10 inc.		\$0 23	
No. 10 to No. 16		23½	78
Nos. 17 and 18		24	80
" 19 and 20		25	83
No. 21		26	95
" 22		27	98
" 23		28	1 03
" 24		30	1 08
" 25		32	1 08
" 26		35	1 14
" 27		38	1 25
" 28		42	1 40
" 29		45	1 55
" 30		48	1 75
" 31		51	1 95
" 32		55	2 35
" 33		59	2 60
" 34		64	2 95
" 35		70	3 65
" 36		76	6 50
" 37		1 00	11 50
" 38		1 30	18 00
" 39		2 00	
" 40		2 60	

COPPER WIRE.

Brown and Sharpe's gauge the
standard.

All numbers to No. 10 in- clusive	\$0 28
Above No. 10 to No. 16.	28½
Nos. 17 and 18.	32
" 19 " 20.	33
No. 21	\$0 34
" 22	35
" 23	36
" 24	38
" 25	40
" 26	43
" 27	46
" 28	51
" 29	54
" 30	62
No. 31	67
" 32	73
" 33	82
" 34	95
" 35	1 30
" 36	1 50
" 37	1 70
" 38	2 00
" 39	3 25
" 40	5 75

Note—When ordering Wire specify exactly size, kind and quantity and be
sure also to give the page number—because it reduces error to a minimum.

THE BEST MUSIC WIRE MADE.

American "or" Imported.

Diameter in
Thousandths of Millimetre
an Inch. Equivalent.

Size.	Price.	an Inch.	Equivalent.
00	\$5.00	.008	0.20
0	4.50	.009	0.22
1	4.00	.010	0.25
2	3.50	.011	0.27
3	3.00	.012	0.30
4	2.50	.013	0.34
5	2.25	.014	0.37
6	2.00	.016	0.42
7	1.80	.018	0.46
8	1.60	.020	0.50
9	1.40	.022	0.55
10	1.20	.024	0.60
11	1.10	.026	0.65
12	1.00	.028	0.72
13	.90	.030	0.77
14	.86	.032	0.82
15	.82	.034	0.87
16	.78	.036	0.92
17	.72	.038	0.97
18	.70	.040	1.02
19	.70	.042	1.07
20	.70	.044	1.12
21	.70	.046	1.17
22	.70	.048	1.22
23	.68	.051	1.30
24	.68	.055	1.40
25	.68	.059	1.50
26	.68	.063	1.60
27	.68	.067	1.70
28	.66	.071	1.80
29	.66	.074	1.90
30	.66	.078	2.00
31	.66	.082	2.10
32	.66	.086	2.20
33	.66	.090	2.30
34	.66	.094	2.40
35	.66	.098	2.50
36	.66	.102	2.60

The prices given in list are for one pound coils only.

We can supply this wire put up in $\frac{1}{4}$ lb., also $\frac{1}{2}$ lb. coils, at advance cost.

GET OUR PRICES before placing your orders elsewhere.

Be sure to specify whether you want the wire for cutting purposes or to make springs. The cutting wire will not make good springs.

The spring wire will not last long for cutting purposes.

BRACELET WINDING MACHINE.

No. A Price, \$12.00



BRACELET ANNEALING STRETCHER.

No. B Price, \$1.50

SPOOLED WIRE, SHELLAC COATED.

One Dozen Spools of a Kind and Size in a Box.

SPRING BRASS WIRE.

Price per Dozen Spools.

Gauge of Wire	$\frac{1}{4}$ lb. Spools	$\frac{1}{2}$ lb. Spools	1 lb. Spools
16	\$2.15	\$3.61	\$6.60
17	2.15	3.61	6.60
18	2.15	3.61	6.60
19	2.21	3.73	6.84
20	2.21	3.73	6.84
21	2.25	3.81	7.00
22	2.35	3.93	7.24
23	2.43	4.19	7.66
24	2.55	4.39	8.40
25	2.65	4.59	8.46
26	2.80	4.87	9.02
27	3.17	5.37	9.62
28	3.33	5.71	10.40
29	3.55	6.25	11.30
30	3.63	6.31	11.60
31	4.17	7.15	12.74
32	4.49	7.69	13.70

SOFT BRASS WIRE.

Price per Dozen Spools.

Gauge of Wire	$\frac{1}{4}$ lb. Spools	$\frac{1}{2}$ lb. Spools	1 lb. Spools
16	\$2.00	\$3.36	\$6.10
17	2.00	3.36	6.10
18	2.00	3.36	6.10
19	2.06	3.48	6.34
20	2.06	3.48	6.34
21	2.10	3.56	6.50
22	2.20	3.68	6.74
23	2.28	3.94	7.16
24	2.40	4.14	7.56
25	2.50	4.34	7.96
26	2.65	4.62	8.52
27	3.02	5.12	9.12
28	3.18	5.46	9.90
29	3.40	6.00	10.80
30	3.48	6.06	11.10
31	4.02	6.90	12.24
32	4.34	7.44	13.20
33	4.66	7.98	14.16
34	5.04	8.64	15.36
35	5.50	9.44	16.80
36	5.98	10.26	18.24

STEEL WIRE.

1 Ounce Spools.

All Sizes.

Gauges 16, 18, 20, 22, 24, 26, 28, 30.

Kind of Wire	Price per Dozen Spools
Annealed Steel	\$0.50
Tinned Steel	.70
Soft Brass	.80
Spring Brass	.85
Soft Copper	1.00

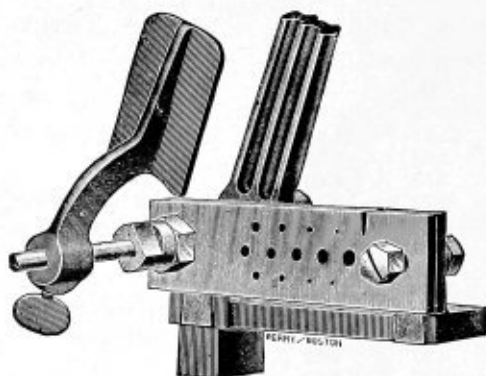
SOFT COPPER WIRE.

Price per Dozen Spools.

Gauge of Wire	$\frac{1}{4}$ lb. Spools	$\frac{1}{2}$ lb. Spools	1 lb. Spools
16	\$2.20	\$3.90	\$7.50
17	2.20	3.90	7.50
18	2.20	3.90	7.50
19	2.20	3.90	7.50
20	2.20	3.90	7.50
21	2.30	4.20	8.00
22	2.40	4.40	8.20
23	2.50	4.60	8.50
24	2.60	4.70	8.60
25	2.70	4.80	9.00
26	2.70	4.90	9.20
27	3.12	5.52	10.34
28	3.46	6.12	11.48
29	3.62	6.48	12.14
30	4.20	7.44	13.94
31	4.52	8.04	15.08
32	4.92	8.76	16.40
33	5.52	9.84	18.44
34	6.42	11.40	21.38
35	8.76	15.60	29.24
36	10.10	18.00	33.76

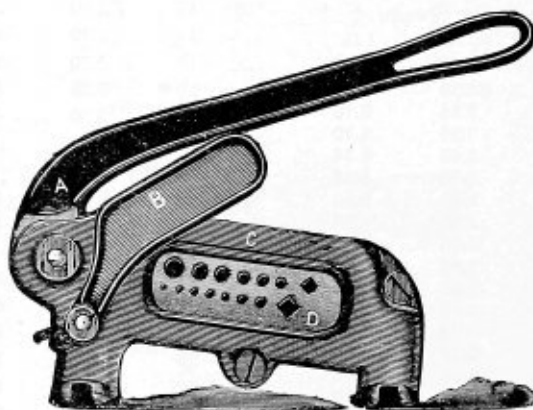
When ordering wire specify exactly quantity, size and kind, and give the page number.

WIRE CUTTERS.



This cutter can be fastened to the bench or held in a vise.

No. 1.....	\$3.00	Cuts from 0 to $\frac{1}{8}$ " diameter.
No. 2.....	5.00	" " 0 " $\frac{1}{4}$ " "



This illustration represents a machine for cutting Iron and Steel Wire of the following sizes: **round**, from the smallest size up to three-eighths inch diameter; **square**, one-fourth and five-sixteenths inch. **We do not however guarantee to cut three-eighths inch steel.**

No. 3. \$12.00.

WIRE CUTTERS.



This machine is commonly called a Rod Cutter—A very powerful machine.

No. 1 Cuts $\frac{1}{8}$ $\frac{3}{16}$ $\frac{1}{4}$ $\frac{5}{16}$ $\frac{3}{8}$ inch Rods, price \$ 5.00.

No. 2 Cuts $\frac{3}{8}$ $\frac{7}{16}$ $\frac{1}{2}$ $\frac{9}{16}$ $\frac{5}{8}$ inch Rods, price 12.00.

The No. 2 is made of Malleable Iron with long cast-steel lever.

“FEDERAL” WIRE STRAIGHTENER.



This Straightener is of an improved pattern and will straighten wire from No. 3 to No. 20.

It is 14 inches long, $4\frac{1}{2}$ inches high, 5 inches wide, and weighs 25 lbs.

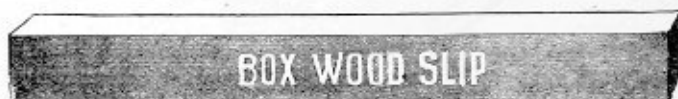
No. 3, Price, \$12.00.

Note—If you fail to find within the pages of this Book any item that you are interested in please give us the facts and get our prices before placing your order elsewhere. We can serve you quickly and to your advantage.

WOOD STICKS OR SLIPS.

(Used for Polishing Purposes.)

Square "Boxwood" Sticks.



All sizes are about 7" long.

Nos.	40	41	42	43	44	45
Sizes	$\frac{1}{8}$ "	$\frac{3}{16}$ "	$\frac{1}{4}$ "	$\frac{5}{16}$ "	$\frac{3}{8}$ "	$\frac{1}{2}$ "
Dozen	\$0.20	.25	.30	.35	.40	.50

These are put up into bundles—1 dozen of a size.

ROUND "BOXWOOD" STICKS.

Nos.	46	47	48	49	50	51
Sizes	$\frac{1}{8}$ "	$\frac{3}{16}$ "	$\frac{1}{4}$ "	$\frac{5}{16}$ "	$\frac{3}{8}$ "	$\frac{1}{2}$ "

(Prices Upon Application Only.)

SQUARE "COTTONWOOD" STICKS.

Nos.	A	B	C	D	E	G
Sizes	$\frac{1}{8}$ "	$\frac{3}{16}$ "	$\frac{1}{4}$ "	$\frac{5}{16}$ "	$\frac{3}{8}$ "	$\frac{1}{2}$ "
Dozen	\$0.10	.15	.20	.25	.30	.40

BOXWOOD BLOCKS FOR ENGRAVERS.

Nos.	H	J	K
Sizes	2"x3"	2 $\frac{1}{2}$ "x3 $\frac{1}{2}$ "	3"x4"
Each	\$0.30	\$0.40	\$0.60

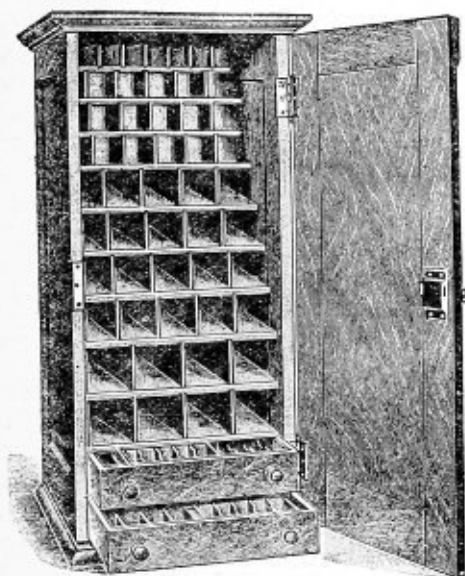
(Special prices for quantity, upon application.)

NEVER FAIL to write your orders by the New System—a short, simple way, yet most perfect. It tells exactly the item wanted, and the number of the page on which the item is located.

Viz., 3 Doz., No. D—616.

LAFAYETTE WORK ROOM CABINET.

Specially arranged for holding Files, Drills, Taps and Dies and Tools generally.



No. A, \$18.00.

This Cabinet has 54 pigeon holes holding all lengths of files from 2" to 8" inclusive.

The two drawers have 48 partitions each arranged to hold all sizes of Drills Nos. 1 to 80 inclusive.

The arrangement is also made for Needle Files.

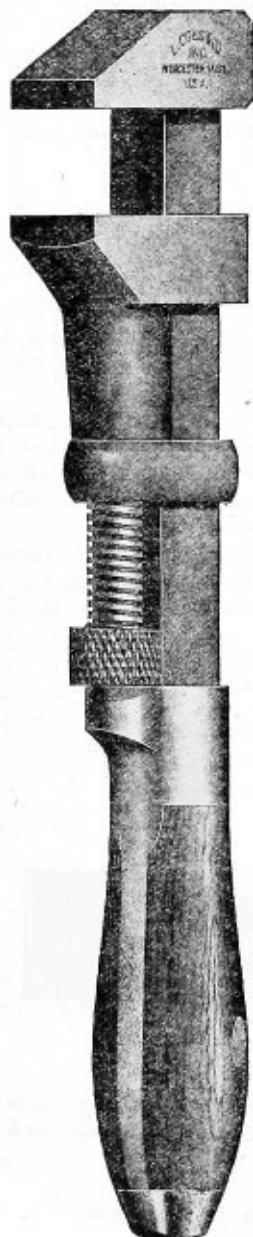
A full set of labels is furnished with each cabinet, giving the numbers of Twist Drills, also the names of files.



Dimensions—Height, 34"; Width, 14 $\frac{1}{4}$ "; Depth, 15 $\frac{5}{8}$ ".

This Cabinet is really a valuable fixture in the Tool Room. By its use you can find the Tool you want, when you want it. It will pay for itself in a very little while in the time it will save.

When ordering always affix the page number to the item number in every case, viz.: 1 only, No. A—617.



COES, "GENUINE" WRENCH.

The first and original type of "Knife-Handle" wrench. No feature in this wrench is used in the imitations and each exclusive feature of handle and construction is the result of experiment and test.

HANDLE. Cast semi-steel frame, hardwood sides, secured at both ends by insertion under metal and riveted up under pressure. The soundest, strongest wood handle made.

SCREW. Steel, hardened and in one piece. Imitations are in two and sometimes three parts.

JAW. Semi-steel casting. Hardened.

BAR. Steel, specially imported material and fully hardened. All parts interchangeable.

10 to 15 per cent. stronger than any imitation or substitute made by others.

Warranted free from mechanical defects and both wrench and trade name registered and each wrench stamped with maker's name, etc.

All wrenches are subject to eleven inspections before assembling and five after assembling.

Size	Black Dozen	Bright Dozen
6 inch	\$ 9 00	\$11 50
8 "	10 00	12 50
10 "	12 00	15 00
12 "	14 00	19 00
15 "	24 00	30 00
18 "	30 00	36 00
21 "	36 00	42 00

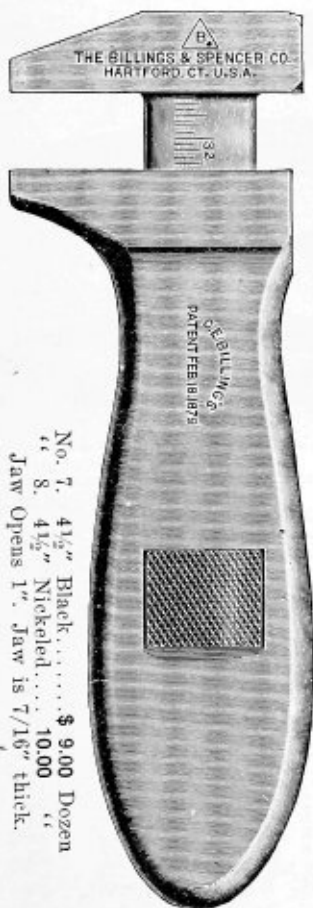
BILLINGS' IMPROVED PATENT ADJUSTABLE POCKET WRENCHES.

Illustrations are full size.

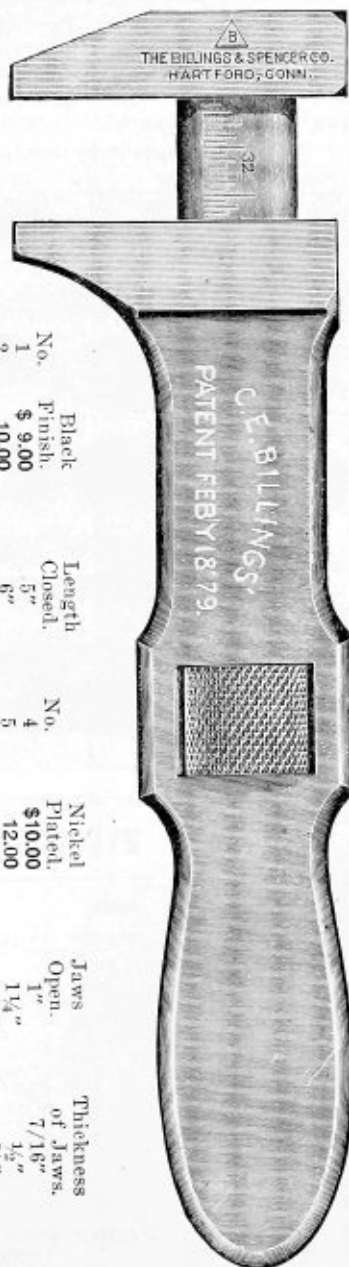
These wrenches have gained a world-wide reputation.

Drop forged from Bar Steel.

Sliding Bar graduated to 32ds of an inch, with oval edges.



No. 7. 4 1/2" Black.....\$ 9.00 Dozen
 " 8. 4 1/2" Nickeled.... 10.00 "
 Jaw Opens 1". Jaw is 7/16" thick.



No. 1
 2
 3
 Black
 Finish.
 \$ 9.00
 10.00
 12.00

Length
 Closed.
 5"
 6"
 7"

No. 4
 5
 6
 Nickel
 Plated.
 \$10.00
 12.00
 15.00

Jaws
 Open.
 1"
 1 1/4"
 1 3/4"

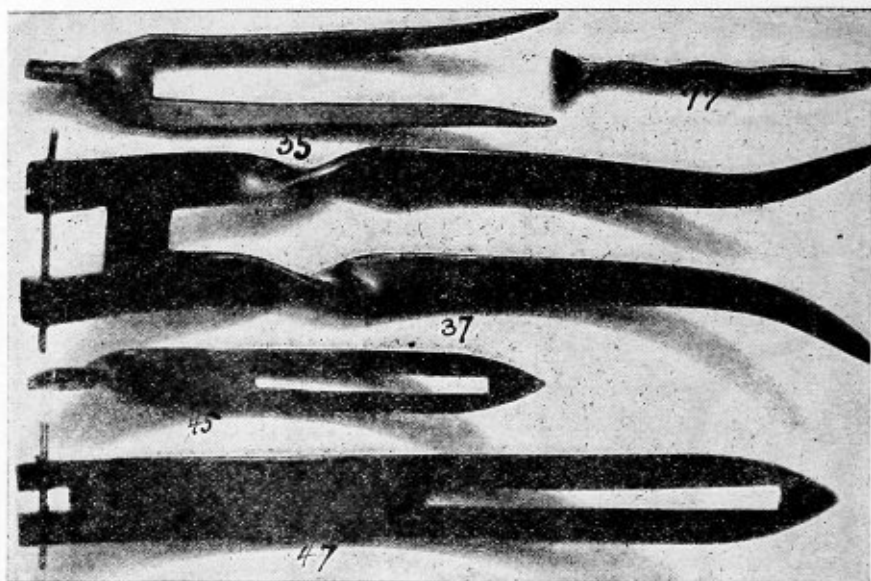
Thickness
 of Jaws.
 7/16"
 1/2"
 5/8"

(All prices are per dozen.)

ZYLOLOID

All goods put up in convenient dozen packages, and will NOT be broken on orders for less than Three Dollars in value. In ordering please specify No., Name and Color wanted, otherwise shell goods will be sent.

Special goods made to order.



NO. OF ILLUSTRATION

ZYLOLOID BARRETTE and COMB FINDINGS
CEMENTS IN ALL COLORS, etc.

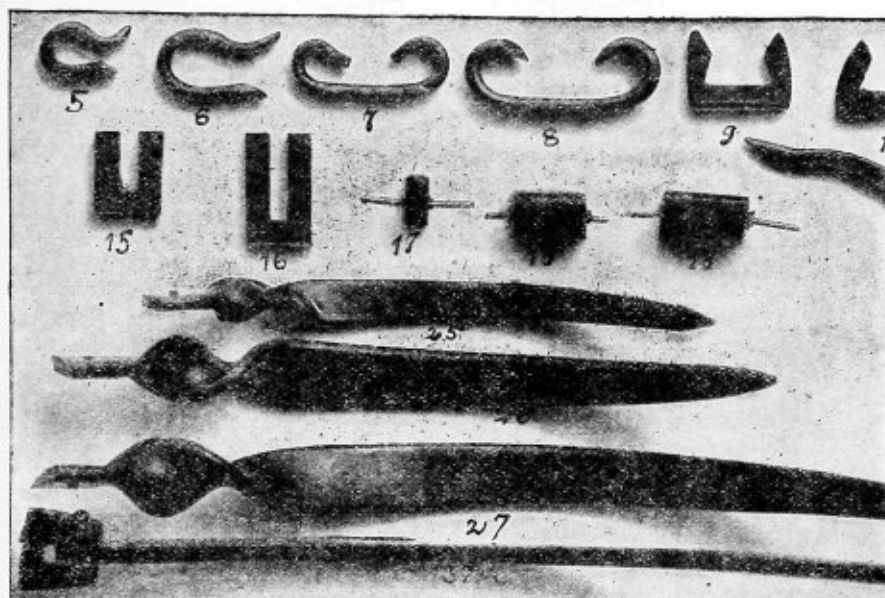
PRICE PER DOZEN

NAME	Will Fit Nos.	Shell, Amber	Silver or Pearl Grey	Ivory White
PINS	3" long	30	45	37
"	4" "	40	60	50
"	5" "	50	75	62
"	6" "	60	90	75
"	3" double	50	75	62
"	4" "	60	90	75
"	5" "	75	117	93
"	6" "	1.00	1.50	1.25
"	3" split	50	75	62
"	4" "	60	90	75
"	5" "	75	117	93
"	6" "	1.00	1.50	1.25
"	3" "	40	45	37
"	4" "	50	60	50
"	5" "	60	75	62
"	5" extra heavy ready jointed No. 6	75	....	....
"	6" split No. 6, 16	60	90	75
COMB	Sides 3" long	30	45	37
"	Teeth 3" "	30	45	37
"	" 3" " Crinkled	50	75	62

ZYLOLOID

All goods put up in convenient dozen packages, and will NOT be broken on orders for less than Three Dollars in value. In ordering please specify No., Name and Color wanted, otherwise shell goods will be sent.

Special goods made to order.



NO. OF ILLUSTRATION

ZYLOLOID BARRETTE and COMB FINDINGS
CEMENTS IN ALL COLORS, etc.

PRICE PER DOZEN

ZYLOLOID				BARRETTE and COMB FINDINGS CEMENTS IN ALL COLORS, etc.				
Shell	Amber	Silver or Pearl Grey	Ivory White	NAME	Will Fit Nos.	Shell Amber	Silver or Pearl Grey	Ivory White
CEMENT—								
1	101	201	301	Small	.....	\$3.00	\$4.50	\$3.75
2	102	202	302	Large enough for 150 repairs.....		6.00	9.00	7.50
CATCHES—								
5	105	205	305	Small will fit Nos.	25, 26, 55, 56, etc....	.30	.45	.37
6	106	206	306	Large	" 27, 28, 57, 57 J and 58	.30	.45	.37
7	107	207	307	Small double	" 35, 36.....	.50	.75	.62
8	108	208	308	Large	" 37, 38.....	.50	.75	.62
9	109	209	309	Small flange	" 45, 46.....	.50	.75	.62
10	110	210	310	Large	" 47, 48.....	.50	.75	.62
JOINTS—								
15	115	215	315	Small split	" 25, 26, 35, 36, 45, 46, 55, 56	.30	.45	.37
16	116	216	316	Large	" 27, 28, 57, 58.....	.30	.45	.37
17	117	217	317	Single	" 47, 48.....	.30	.45	.37
18	118	218	318	Block small	" 37.....	.30	.45	.37
19	119	219	319	" large	" 38.....	.30	.45	.37

SPECIAL DOGWOOD MALLETS.

(For Silversmiths and Crafts Workers.)

For working metal over a stake, these Mallets will draw the metal better, also quicker, than any other mallet or hammer made.

Work produced by these mallets require less planishing.



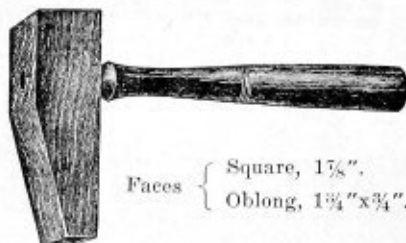
No. A,
\$3.50 dozen.

The head is 5" long; faces are $\frac{1}{2}$ "x $1\frac{1}{4}$ ".



No. B,
\$4.00 dozen.
Length of Head, 5".

Faces { Square, $1\frac{1}{2}$ ".
Oblong, $1\frac{1}{2}$ "x $\frac{5}{8}$ ".



No. C,
\$5.00 dozen.
Length of Head, $6\frac{3}{4}$ ".

Faces { Square, $1\frac{5}{8}$ ".
Oblong, $1\frac{3}{4}$ "x $\frac{3}{4}$ ".

SPECIAL SILVERSMITHS' HAMMERS.

Also Used by Arts and Crafts Workers.



Numbers.....	A	B	C*	D	E
Weight Each	....3/16 lb.	1/2 lb.	1 lb.	1 lb.	2 3/4 lbs.
Price Each	.....\$1.00	\$1.50	\$1.50	\$1.50	\$2.50

Note—Size C is not so long as No. D, but much larger in diameter at both ends.



No. G \$1.00 Each
 Diameter of Large End 3/4"
 " " Small " 1/2"
 Length 9". Weight 3/4 lb.



No. H \$1.00 Each
 Made of 7/8"x7/8" Steel.
 Length 6 1/2". Weight 1/2 lb.



Style J



Style K



Style L



Style M



Style N



Style P

Styles J to P inclusive are made in 5 Sizes.

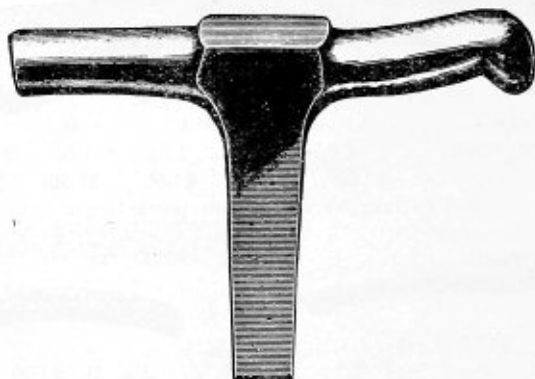
Always mention Style with Size when ordering.

Viz., 1 only M—1"—623.

Weight, Approx.	1/2 lb.	3/4 lb.	1 1/8 lbs.	1 1/2 lbs.	2 1/4 lbs.
Diameter of Face	3/4"	7/8"	1"	1 1/8"	1 1/4"
Price Each	\$0.75	.75	1.00	1.35	2.00

SPECIAL STAKES.

(For Silversmiths and Crafts Workers.)



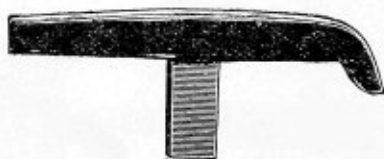
No. A, \$1.50.



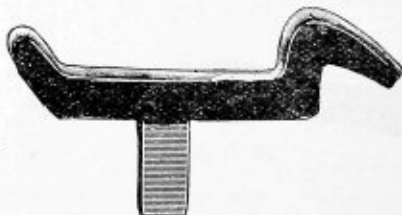
No. B, \$1.00.



No. C, \$1.00.



No. D, \$1.00.

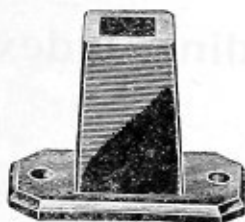


No. E, \$1.00.

Order by respective number and be sure to affix the page number—viz.:
1 only, No. B—624.

SPECIAL STAKES.

(For Silversmiths and Crafts Workers.)

No. G.
\$1.00.No. H.
HOLDER.
\$1.50.No. J.
STAKE.
\$0.75.No. K.
STAKE.
\$0.75.

No. N, \$1.50.



IRON PITCH BOWL.

No. L, 6", \$1.50.

No. M, 8", \$1.75.

For Leather Ring Pads
see Index.No. P.
STAKE.
75c.No. R.
STAKE.
75c.No. U.
STAKE.
75c.No. V.
STAKE.
75c.

Always affix page number to item number—viz., 1 only, No. L—625.

Note Regarding Index

We have introduced in this book a *new feature* in the arrangement of every item—that is of great value to our customers.

Every item is placed alphabetically, from A to Z, according to its most common name, which is a part of every folio number.

By this arrangement you will not have to consult the general index once in a hundred times.

Use this book the same as you would your telephone directory or dictionary and you will find every item much quicker than by the old method.

The value of this arrangement will be seen at a glance, although we have placed here a regular general index.

ALSO—Please write all orders by the *new method*. It will save you much valuable time and positively avoid error. If you want Brushes, simply write:

1 Doz. No. 3708—57

If you want a Draw Plate simply write:

1 only, No. W—159A

If you want some other item or items, write same viz:

1 only, No. B.—336, etc., etc.

First, Quantity. Second, Item number. Third, Page number.

AMERICAN OIL & SUPPLY CO.

52-54-56 Lafayette Street,
Newark, New Jersey.

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- 460—Federal Punches
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 - 85—Felt Ring Buffs
- 234—Felt Sheet
- 232—Felt Wheels
- 386—Fibre Mallets
- 236—Figures and Letters
 - File Card Cloth
 - 1 $\frac{1}{2}$ Inches Wide, 40c
 - 2 Inches Wide, 55c
 - Prices Per Foot

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- File Cards
 - Phoenix \$0 15
 - Colton's 25
 - Nicholson's 35
 - Lafayette 50
- Note—The Lafayette Brush is made of a gray Tampico mixed with a steel wire. It is the best and most serviceable brush made.
- 314—File Handles
- 256—Files—American
 - Files—Bench
 - To Order Only
 - Width, 2 inches. Each, \$ 5 25
 - Width, 3 inches. Each, 8 00
 - Width, 4 inches. Each, 10 50
 - Width, 5 inches. Each, 14 50
 - Width, 6 inches. Each, 18 50
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- 394—Flux—All Kinds
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- 301—Foot Grinders
- 343—Foot Lathes
- 450—Foot Pressers
- 260—Foot Presses
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- 503—Frames—Saw
- 200—French Enamel
- 319—French Ingots
- 404—French Nippers
- 432—French Pliers
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